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An Address*

By

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GENERAL HEATON, LADIES, AND GENTLEMEN: In 1957 your Government honoured me greatly by inviting me to visit the United States and see some of your medical installations. Through the kindness of General Hays I had the privilege of addressing you in this renowned and progressive institution which as I said then, continues to influence the medical world as did Major Walter Reed, the man you so justly honour.

During that visit I learnt the importance of understanding your points of view as well as of fostering good relations between our two Services. That you desire to understand ours is obvious from the way your senior officers have taken part in the medical exercises at the Field Training Centre, Mytchett, and from your readiness to post your officers to Britain to assist in the build up of our various demonstrations.

At that time I made the point that medically our prime duty was in simple terms, the prevention of manpower wastage.** Today, in addition we are charged with the task of using the manpower allotted for medical in the most economical way.

Medical planners are aware of the keen competition for manpower between the arms and branches of the service and between the Services and industry and are fully conscious that the types of personnel required are not readily available. Are our officers with professional duties, research workers and local administrators aware of the ever increasing struggle to meet their demands for adequately trained staff or do they work in a world divorced from reality?

I would like to talk with you on three broad topics, Manpower, Logistics and present trends in the Medical Services of the British Army.

Left to right: MAJ. GEN. O. K. NIESS *(The Surgeon General, U. S. Air Force);* LT. GEN. SIR ALEXANDER DRUMMOND *(Director General, Army Medical Services, The War Office, London);* LT. GEN. LEONARD D. HEATON *(The Surgeon General, U. S. Army);* MAJ. GEN. THOMAS J. HARTFORD *(The Deputy Surgeon General, U. S. Army).*

* Presented at Medical Meeting of the Surgeon General of the Army, Sternberg Auditorium, Walter Reed Army Medical Center, February 18, 1960.

** See Lt. Gen. Drummond's "Military Medical Problems in Britain Today," *Military Medicine,* 121:163-173, Sept. 1957.

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MANPOWER

In overcoming the shortage of manpower in Britain the medical standards for the National or Compulsory Service intakes for the Army were lowered. To obtain for world wide service an efficient regular army of 182,000, however, careful selection is necessary because such a force is too small to carry restricted medical or physical categories.

(a) *Personnel Selection from the Psychological Aspect*

Since 1941 in the United Kingdom personnel selection of all recruits has been undertaken and is now based on the results of a battery of five tests which over many years have proved very valuable in allocating men for trade training. These tests are:

(i) The Dominoes Test—a non verbal test of innate intelligence,
(ii) The Problems Test which requires knowledge of and aptitude for mechanical subjects,
(iii) Arithmetic Test,
(iv) Verbal Test—in spelling and the comprehension of words,
(v) Instructions Test involving complex directions to be followed quickly and accurately.

Personnel selection is costly and time consuming. Fifteen minutes is the minimum time which should be allowed for an interview and if the assessor is not to become stale three interviews per hour are found to be sufficient. On average three hours are spent in testing and assessing each recruit. Despite these medical and psychological tests the discharge rate of regular recruits within the first three months of service may amount to ten per cent. This is not surprising when one considers that within the reservoir from which these men are drawn one-third of those who seek medical advice do so on account of neurotic, psychosomatic or psychiatric complaints.

Is personnel selection for the Services not of sufficient importance to merit more attention from schools and be applied before the school leaving age? It would at least assist adolescents to choose a career and perhaps in civil life stop the drift of many into their twenties before they have made up their minds.

The Apprentice School of the Royal Army Medical Corps is of interest in this connection. It was established to provide an educational background and to develop powers of leadership necessary for the future non-commissioned officers, warrant officers and non-medical officers of the Corps. In addition these young men receive a grounding in whatever profession or trade they have chosen as a career and during their training are prepared for the civil as well as the Army technical examinations.

On average, after six months probation ten per cent of these apprentices have to be transferred to other corps as not possessing sufficient aptitude. This indicates that initially a more rigid personnel selection is required.

In the case of candidates for regular commissions as medical officers selection is very strict, only forty-six per cent of those applying being accepted. This strict selection is necessary if over one-third of these officers are to become the future consultant or senior specialist group of the Army and as such will have to obtain high qualifications. The remainder, to fit themselves for general duties, are expected to take at least a postgraduate diploma.

In 1957 thirty-six per cent of the regular officers of the R.A.M.C. held postgraduate qualifications. Today the figure has risen to fifty-two. The percentage who hold higher qualifications is twenty-two.

Are these standards of selection too severe? Is there a danger of producing a too scholastic or academic type of individual? If we believe that in order to succeed in this competitive world a sound education and broad experience are essential, then we should agree that the standards of personnel selection must be progressively raised to keep pace with advancing trends.

(b) *Physiological Selection*

The physiological selection of manpower as distinct from medical and psychological fitness should not be neglected. Can geneticists or biologists help by picking out those who under conditions of stress are prone to breakdown or who react abnormally to chemical agents? For example, it is now established that a highly significant number of individuals who do not secrete ABH blood group substances suffer from duodenal ulceration.

In periods of stress how great is the risk of serious breakdown? Can it be determined with a greater degree of accuracy? If so, can such individuals be screened so as to reduce medical liabilities?

Interest has been growing in the past few years in an intrinsic abnormality of red blood cells which undergo haemolysis if exposed to certain chemical agents, among them primaquine used in the treatment of malaria, acetanilide, and sulphanilamide. In favism the same sensitivity is found and haemolysis can occur after the eating of broad beans or contact with the pollen of the broad bean flower. This abnormality results from a deficiency in the red cells of the enzyme glucose-6-phosphate dehydrogenase. In the acute episodes there is usually a history of sudden collapse, great pallor and the passing of dark red urine.

Recently, in the General Hospital, Singapore, one Malay and nineteen Chinese babies suffering from haemolytic disease of the new born unassociated with ABO and Rh incompatibility, were shown to have this enzyme deficiency in their red cells. This stimulated a search through the records of the paediatric Department of the British Military Hospital which revealed four such cases and the same deficiency was found in one or more members of the respective families.

A survey of Malay and Queen's Chinese troops is now being undertaken to determine the extent of this condition among the Forces in the Far East.

It is essential that the men forming the small highly mobile teams envisaged in modern warfare should have no untoward sensitivities. To exclude those few who are likely to become serious liabilities it would be advantageous to have on the selection board a specially trained general duty medical officer.

(c) *Dilution of Army Manpower by the Women's Services*

To reduce where possible the need for skilled manpower enlistment of women is increasing.

Fortunately, in the case of nursing and the para-medical specialties training is productive as one learns by working on the job, it is in fact an apprenticeship. If this were discontinued even civil hospitals and medical organizations would indeed be in dire straits. For example, the loss of the other ranks or enlisted women of Queen Alexandra's Royal Army Nursing Corps employed as student nurses in military hospitals throughout the world, would reduce our allover standard of medical care by over sixty per cent.

It is found that the increase in the number of their enlistments runs parallel to the marriage wastage rate and consequently the size of the Corps remains the same. As many of these young women marry into the Army the loss is not complete as a fair proportion in due course will form a convenient on the spot nursing reserve.

(d) *Civilian Dilution*

Civilian dilution, both male and female, is taking place in the United Kingdom and overseas. The object is to obtain long term civilian staff for carrying out domestic duties and routine chores.

It is too early to offer an opinion on the success of this scheme but there is every indication that it will do well.

(e) *Training to Reduce Manpower Requirements*

Training is an important factor in obtaining greater manpower efficiency. Consider what can be achieved in nurse training.

At Exercise Medical Deucalion, Mytchett,

1956, General Hays stated that to meet atomic commitments we should have to develop sub-professional technicians.

Prior to 1959, recruits at the Depot and Training Establishment of the Royal Army Medical Corps after basic training were posted to Military hospitals and other units for preliminary nurse training and classification. As many showed little or no interest in what was being taught, this system was considered unproductive and a waste of time.

Today ninety-two per cent of recruits before being posted from the Depot have

(i) passed basic training,
(ii) obtained a civil certificate in First Aid and Home Nursing,
(iii) gained the qualification of Nursing Orderly Class III,
(iv) scored a proficiency mark in the 24 Procedure Test.

There is no doubt that the reason for this advance is the introduction of these 24 procedures.

Examples are:

(a) Cleaning a barn, school or barrack to accommodate patients,
(b) Laying out of beds and tables for their speedy reception,
(c) Securing an adequate airway in a comatose patient and placing him correctly,
(d) Putting a seriously ill patient to bed,
(e) Noting symptoms and recording blood pressure, temperatures, pulse and respiration rates,
(f) Dressing wounds by no touch technique,
(g) Immobilising fractures and soft tissue injuries by means of plaster gutters or slabs,
(h) Setting up and operating intravenous drips and gastric suction.

Nurse instructors report most favourably on the new interest which these orderlies or Corps men show in ward duties and their readiness to accept responsibility.

They reckon that with forty hours demonstration and practice a small class can be trained to proficiency. This has been actually done with non-English speaking Gurkha soldiers.

This training has become standard throughout the Medical, Dental and Nursing Corps of the British Army. The training and development of the sub-professional technician has thus been achieved. Through this form of training the standard of nursing has greatly improved and today we are in a better position than ever before in our history to meet medical commitments in cold, limited or global war.

(f) *Saving of Manpower*

Because of their costly training it is now uneconomical to discharge regulars or career men from the Army on account of any disease which requires some time to cure as when diagnosed the patient is often a key man. Another important aspect is the good employer relationship. An example of both is the new Army Policy on Pulmonary Tuberculosis. After diagnosis the routine treatment is a three months' course on drugs and antibiotics followed, when necessary, by surgical excision of the affected part of the lung or further therapy. Within a year the patient should be back on restricted duty and after three or four years satisfactory progress is replaced in his former medical category. Aspects of the scheme which can be neglected at peril are:

(a) Close survey of contacts,
(b) Sensitivity testing of the tubercle bacillus,
(c) Regular follow and check-up.

In pulmonary tuberculosis surveys all dependents and domestics must be included and this is more difficult than one imagines. For non-United Kingdom based troops a pilot scheme was first started in Malaya for the British Gurkhas and their dependents.

The Gurkha is given the same treatment as the United Kingdom based patient and if surgical excision of the disease is necessary he is transferred for treatment to the Army Chest Centre at the Connaught Hospital, Hindhead, England.

This scheme has been most successful.

The source of the disease is believed to be in Nepal. Of future interest is a survey of contacts in that country.

The experience gained with the Gurkhas has facilitated the introduction of a Ghana Defense Forces Tuberculosis Control Scheme which includes the Ghana civil Police. With the help of the Field Research Team of the West African Council for Medical Research the tuberculosis control scheme has been put into effect. First a unit medical officer took a careful census of all Ghana Army personnel and their dependents on the station. The Field Research Team then took over and, using a 72 mm. X-ray film, X-rayed the military population and concurrently Mantoux tested them. All the negative reactors were vaccinated with BCG vaccine.

At Kumasi, the main training centre of the Ghana Army, no fewer than 99 per cent of the askaris and their wives and children were examined. Positive cases were segregated and their contacts carefully scrutinized. The patients were sent to the Ghana Military Hospital at Acera for treatment.

As the diagnosis of tuberculosis was considered to be a death sentence many patients were distracted and wished to return to their villages in order to consult their witch doctors.

To gain their confidence a novel idea occurred to Major T. J. Ryan, the physician in charge. He kept the out patients' notes in an office which could only be entered by passing through the admission ward. The arrangement brought the worried inpatient in to close contact with the happy and satisfied out patient who had graduated to domiciliary treatment. Today the Ghana soldier's outlook as in the case of the Gurkha has completely changed. Pulmonary tuberculosis will soon hold no dread for these people.

It is of interest that the first two Ghanaians have, under this scheme, been successfully operated upon at the Army Chest Centre.

Control schemes for tuberculosis are about to be launched in the Aden Protectorate, British Somaliland and the East African Territories.

Logistics

Logistics is the art of moving, quartering, supplying and maintaining troops. If not closely supervised it is expensive in manpower, money, material and transport. The medical aspect is concerned with the supply of special material or equipment and the evacuation of the sick and wounded.

In the past these efforts were hampered by the return pay load system which in the case of equipment was reputed to be a means of preventing wastage. Returned containers and their stout packing cases were vouchered from unit to unit, at each they were brought on charge, stored and repaired. Ultimately as little use could be found for them they were usually destroyed and written off. This sad wastage of manpower, time, money, and storage space is rapidly giving place to a system which by the use of expendable containers will remove many handling and accounting chores.

The corollary to this method of supply is that all equipment should be carefully prepared, for example, all sterilizable material should after purchase be sterilized and issued suitably packed and ready for use. Sterile dressing material can be used for all purposes, unsterile has but limited use. In the case of the sick and wounded the tradition that returning empty vehicles will be used as ambulance transport is hard to kill.

If "bush fires" or "cold war" incidents are to be effectively dealt with the containing force including medical must arrive promptly and with a display of efficiency and strength. In other words the force must be airborne and have its equipment packed in air portable loads readily handled by one or at the most two men.

There are three major factors to study in medical air portability, two concern freight, namely, bulk and weight and the third and most important, is the quantity of the equipment which must be sufficient to cover the commitment.

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Little difficulty is being found in resolving the medical bulk and weight problems, for example, the quantity of intravenous fluids carried by the Blood Transfusion Team was found to be too small to meet present conventional requirements. By, among other things, substituting plastic containers and cardboard packing cases for glass bottles and wooden boxes the amount of fluid carried by this unit has been increased by one hundred per cent with a reduction in weight and bulk. Only three types of fluid are now carried, namely, 5 per cent glucose, normal saline, and dextran. These are contained in plastic bags holding one liter which are packed in cardboard boxes.

The Field Surgical Team equipment weighed 6700 pounds and although officially provided with one three-ton vehicle, a trailer and a ¼-ton truck required in practice three three-ton trucks with a trailer as its transport.

This Team's personnel and equipment can today be transported in three ¼-ton vehicles or jeeps with trailers or in three medium sized Westland Whirlwind helicopters. Its equipment has been reduced in weight to approximately 1100 pounds, while at the same time it affords greater surgical cover.

In a similar manner the equipment of the Neuro-surgical Team is being radically reduced. The bulk and weight of the Field Ambulance equipment is also under scrutiny. While reducing these, additional cover for severe casualties must be provided. It is evident that new thought must be given to medical equipment requirements, their packaging and method of supply.

The introduction of the Central Sterile Material or Supply Service has saved a great deal of time, labour and transport but has the time not come when all autoclaving except, perhaps, that of the operating theater instruments should be divorced from individual hospitals and be undertaken by one hospital in a group or by a separate department or organization unconnected with any hospital?

In the Aldershot area, the Cambridge Military Hospital undertakes the sterilizing for itself, the Louise Margaret Maternity Hospital, the Army Dental Hospital and the Connaught Hospital (the Army Thoracic Unit), etc. In addition it supplies some fifty-seven Medical Reception Stations and Medical Centres and the needs of our troopships.

The grouping of hospitals and medical units for the supply of sterilized equipment has proved satisfactory. It is considered that while improving the service further economies could be made and logistic problems reduced if sterilization for world wide purposes could be undertaken centrally.

The logical step is to have a central cobalt 60 gamma radiation plant which would supply the requirements for the Army and perhaps the sister Services. There is the drawback that cotton and linen fabrics are denatured by repeated exposure to gamma rays, but fortunately materials of man-made fiber are not so affected and are a suitable substitute. If sterilization by radiation were used it would mean that heavy autoclaves would no longer be required by field units and their number in general hospitals could be radically reduced.

To reduce further the medical logistic problem some form of standardization of dressings is essential. The Cambridge Military Hospital has been experimenting with standard packs of swabs and dressings for abdominal operations. For the Suez operations they were contained in linen bags wrapped in paper. Today stout paper bags are used. These dressings are packed in twenties in cardboard ration boxes measuring $19 \times 18 \times 10$ inches.

If sterilization by gamma radiation is contemplated, polythene must be substituted for the paper bags as these lose their tensile strength when irradiated.

Gamma ray sterilization allows the polythene bags and their containing box to be hermetically sealed before sterilization. This saves extra handling and a number of critical checks necessary when using the conventional autoclave.

Another important logistic problem is the provision of adequate dressings and fluids for the treatment of burn wounds in the forward areas. The initial treatment extends from the time the burn is inflicted until the patient can receive definitive treatment which is best undertaken many miles away from the stress of battle.

For the patient's future this initial treatment is most important. It may last for up to four days and consists of sedation, antibiotics, protection of the burnt area and the giving of fluids either by mouth or intravenously.

Sedation given intramuscularly or intravenously is routine and represents no problem nor is there any difficulty in administering antibiotics. The provision of a suitable burn dressing, however, appeared until recently an insurmountable problem. To meet the needs of a brigade group exposed to a nuclear heat flash and its secondary fires these dressings filled three three-ton lorries or trucks. To imagine one can call forward these bulky dressings at the time and to the place required is wishful thinking. Major Forage, R.A.M.C., in his research on burns found that a simple non-adherent cover preferably of a transparent nature so that the tissue reaction to injury could be watched, was all that was required and recommended the use of thin polythene sheeting or in the case of hands or a limb a polythene bag.

This material prevents evaporation from the wound and instead of a hard and inelastic coagulum a soft whitish edematous mass is formed.

Having protected the wound with the polythene sheet the patient can be covered by an ordinary blanket without fear of added infection. In place of the three three-ton lorries or trucks for the old type of dressings, transport is now required for only two cardboard ration boxes.

The injuries due to modern conventional weapons such as the F.N. rifle and its machine gun are of a severe nature and the more dangerous to life and limb than any previously encountered. A note in *The Times* of February 1, 1960, suggests that the new U. S. Army M.14 rifle may be in the same category.

It would be foolish to think that only a particular group of nations possesses this type of weapon and that there are no longer any fairy godmothers to present them to their protégés.

Not only has the medical task increased enormously but the necessity for the arms to support medical in dealing with such casualties has become very real.

Adequate initial treatment and careful evacuation of wounded from the place of injury to a forward medical unit are matters of great importance if further shock and trauma are to be prevented.

Air transport from the regimental aid post or the forward medical unit to the place of definitive surgery is, of course, the method of choice. It must, however, be realized that air evacuation may be neither feasible nor possible. In the event of mass casualties all forms of transport will have to be pressed into the evacuation service. This unfortunately has to be accepted no matter how heavy the cost in rising morbidity and mortality rates.

Research into the preparation of the wounded for evacuation, for example, by the administration of the lytic cocktail or by hibernation and the best means of conveyance must be pressed forward.

The main problem in the logistics of casualty evacuation is the manner in which patients are to be conveyed to the place of casualty emplaning. This is well worthy of study.

The normal routine is :

To the Advance Dressing Station (A.D.S.) by stretcher, jeep, landrover, or ambulance car.

From the A.D.S. by ambulance car to a holding unit adjacent to the air strip. Here the patients are unloaded and accommodated to await the aircraft.

When this arrives the patients are loaded

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into the ambulance cars and taken to the aircraft for emplaning.

At the hospital area deplaning and loading into ambulance cars for the journey to hospital again take place.

In the 1939-45 War, air evacuation in the case of the British Forces was best developed in Burma by General (now Field Marshal) Sir William Slim's Fourteenth Army.

After the minimum treatment the routine was to move the wounded as quickly as possible away from the noise and stress of battle. The old tradition that to prevent the drain of divisional manpower lightly wounded should be kept in the divisional or corps areas was broken. It was reasoned that if the hospital area is only two or three hours flying distance, the individual when fit should be back to his unit in a similar time.

The evacuation to a prepared landing strip was undertaken by light fixed wing aircraft and from there to the hospital area by transport plane. As judged by the condition of the casualties when they reached the hospital area this was a distinct improvement on all previous forms of transport.

The solution to casualty road conveyance, handling and staging problems is now the Rotodyne type of aircraft by the use of which much handling, loading and unloading of patients and rough journeys can be avoided.

This aircraft can literally be drawn up to the tent wall of an advanced Medical unit for loading and can deplane its wounded at a ward door or even through the window of the hospital.

As the positioning of its doors allows for two lanes of simultaneous one-way traffic its load of fifty dangerously ill patients can be emplaned or deplaned in under ten minutes.

During the past year the Hovercraft—a vehicle which glides on a bubble of air, has interested the Army Medical Services as the type of vehicle which would ensure the tranquil evacuation of the wounded in the forward defended areas.

The Hovercraft is not designed to jump over hedges but for practical purposes can go where a jeep can. It can travel over desert, grass land and water and cross a ditch if it is bridged by some beams covered by a canvas sheet.

The degree of surgical shock, among other things bears a relationship to the amount of jolting and bumping during transportation and can be expressed in terms of G—the force of gravity.

Examples of G effect in vehicles commonly used in conveying wounded are:

A launch in moderate sea	4 G
A 3-ton truck with stretcher gear	3½G
A stretcher jeep or landrover	3 G
An Austin or heavy ambulance car	2½G

The G of the Hovercraft works out at less than 30 per cent of any other vehicle. If this means we can reduce the shock produced by G by 70 per cent or even half this we will be achieving a great deal.

The medical aim is to develop a general purpose low "hover" pallet fitted with wheels so that it can, when not hovering, be used in hospitals or forward medical units as a utility trolley. When necessary, by means of a tow bar, it can be pulled by a jeep or landrover as a trailer.

If wounded are to be conveyed the "hover" phase is used and the pallet is connected by a flexible tube to an air compressor either in the back of a ¼-ton truck or driven from the truck's engine. As the air pressure increases the pallet rises to six or eight inches from the ground and becomes airborne. It can now be towed forward on its air bubble so providing the patient with a smooth journey.

At the medical unit the air pressure is gradually reduced and the pallet sinks on to its wheels. After disconnecting, the patient can be wheeled to bed using the pallet as a trolley.

The Hovercraft principle will no doubt be the means of a further reduction in the mortality rate.

Present Trends

United Kingdom

Effects of Radiation. Clinical interest in

the effects of radiation has been stimulated by the advances made in the treatment of Army patients suffering from neoplastic disease at our joint clinic with the Westminster Hospital, London.

In a few years the tumor dose of gamma or X-rays has increased from 3000 to 8000 r. Doses well over 500 r are given to the chest and it may be that 450 r (the recognized whole body Ld50) is too low for fit and virile young men.

Clinical experience suggests that this figure may be of the order of 500-700 r or more. If this is so it indicates that we can expect fewer nuclear casualties. The question then arises: Has there been over insurance in estimating atomic casualties?

It can be expected that high yield ballistic missiles will be launched against war potential industries and strategic targets. The hazards are burns, blast and to a lesser extent radiation injury. In the field the weapon of choice is probably one of low yield in which gamma and neutron radiation takes priority over blast and fire. The neutrons, it would appear, have a particular effect on the gut while the gamma rays mainly affect the haemopoietic system.

Assessment of the Radiation Dose. Instrumental evaluation of radiation danger or hot spots in the battle area can be accurately determined. In the case of personnel, leaving out the individual whose urgent symptoms indicate that he has received a dangerous or fatal dose, the real difficulty is to define the dose which will in four or five days time, render the soldier ineffective.

Dosimeters are but indicators, the personal type has a variability of $\pm$ 25 per cent. The accuracy of its lower scale which is important, is poor and the extent to which it is shielded must also be taken into account. Another factor is the human biological variation which is of the nature of $\pm 30 - 50$ per cent.

Clinical assessment based on the time of the appearance and the severity of the signs and symptoms would appear to be reliable. In this respect it is unfortunate that the question of malingering has been given undue prominence. Is it a real problem? If so it surely indicates that the standard of personnel selection or man management and training are at fault.

Clinically more is now known about the effects of radiation. Brucer (1958) in evaluating patients treated after the Y 12 incident suggested that the Ld50 was in the region of 800 r. Mathe (1959) working with children suffering from leukemia and using gamma and X radiation over a period, considered that the Ld50 is in excess of 450 r. Mitchell (1960) of Cambridge in treating patients suffering from malignant disease considers that the Ld50 for man is in excess of 500 r.

He states that many of his patients do not complain of nausea and while under treatment a number continued to drive their cars.

Clinically there appears to be good evidence for re-assessment which will allow a more accurate estimate of these casualties.

Cyprus

War Surgery in Cold War. In his 1960 lecture of the Hunterian Professorship, Lieutenant Colonel J. C. Watts gave an account of his recent experience with over 700 missile injuries sustained during the operations in Cyprus.

He pointed out that in conventional warfare organized teams of skilled Medical Corps men collect and give immediate treatment to the wounded. On the other hand in internal security operations help may come from a comrade and sometimes, though seldom, from a civilian passer-by.

If, under these circumstances, lives are to be saved and morbidity reduced a knowledge of first aid is absolutely essential. It is the duty of everybody, civil and military, to have this knowledge if only to deal with the rising accident toll in every day life.

In Britain civil First Aid training is given by St. John and St. Andrew Ambulance Brigades and the British Red Cross Society. So alive are these bodies to the needs of the injured that they have agreed upon and adopted a common manual of instruction.

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In the British Army the aim is that all personnel should be skilled in First Aid measures which may be termed the immediate surgical care of the injured.

In the early treatment of the wounded in Cyprus five common faults were noted all due to neglect of cardinal principles in first aid, namely:

1. Failure to secure an adequate airway,
2. Allowing the unconscious patient to lie on his back and drown in his own secretions instead of placing him in the coma position,
3. Failure to obtain adequate fixation of fractures and injured soft tissues,
4. Over sedating,
5. Giving fluids by mouth.

Neglect of these essentials will jeopardize the lives of the injured.

Provision of blood in Cyprus was such that in the resuscitation of patients it was given where it was estimated that a pint or more had been lost.

The aim was to restore the normal blood volume within four hours of wounding and so avoid renal complications. Failure to respond suggested uncontrolled hemorrhage and the necessity for immediate operation.

It was found that the arterial transfusion had no advantage over intravenous using the Martin's pump by which means a pint of blood could be given in three to five minutes.

Surgical Treatment of Soft Tissue Wounds. Tissues through which a fast moving missile has passed with explosive force are extensively damaged. Experience in dealing with the casualties in Cyprus has stressed the need for delayed primary suture of missile wounds.

Preparation of such wounds involves:

(a) Removal of foreign bodies especially pieces of clothing and dirt,
(b) Debridement of devitalized tissue,
(c) Decompression of tissue and muscle by liberal incision of deep fascia,
(d) Dressing the wounds with non-adherent material,
(e) Supporting the injured parts by splints or by a plaster slab or gutter.

In 4-7 days under an anesthetic the wound should be inspected and if dry and clean suture can be performed or if skin is defective partial suture and skin grafting.

By this method healing occurred in 97 per cent of all wounds.

Antibiotics. As a rule before operating, a mega unit of penicillin was given intramuscularly. As reliance was placed on surgery and the efficient toilet of the wound no further penicillin was normally given.

Middle East

Radioactive Isotopes. Colonel W. Hargreaves working in Baghdad was able to detect in cases of haemolytic anemia excessive red cell destruction in the spleen. By labelling the red cells with radiochromium (51Cr) he estimated their survival time, the activity of the spleen being measured by Geiger counting over the splenic area.

These tests helped to select patients who were likely to benefit from splenectomy; included in the group were those suffering from acholuric jaundice, Hodgkin's disease, chronic lymphatic leukemia, chronic malaria and Banti's syndrome.

The use of intravenous radio-gold in chronic myeloid leukemia has proved a useful therapeutic measure. A teenage girl was admitted to a hospital in a moribund condition with multiple chloroma, anemia and severe purpura. She responded so successfully to radio-gold that after a month she left for home entirely free from symptoms. She is still in a state of complete remission nine months after treatment.

Aden

Maintenance of fitness as Florence Nightingale pointed out one hundred years ago, is the Commanding and Medical Officers' "combined operation."

In the Aden Peninsula it is being well demonstrated how the combined regimental and medical effort is in a year able to cut by fifty per cent the overall sick rates per 1,000 troops even where there are poor living conditions, indigenous disease and fly infestation.

In preventive health measures the medical officer must get results with as little inter-

ference with normal routine as possible. Immunization, for example, can now be achieved by using the intradermal rather than the subcutaneous method of inoculation.

Using a new combined Typhoid-Para A and B and Tetanus Toxoid vaccine it has been shown that the antibody response to intradermal inoculation is satisfactory even for primary immunization. The advantage is that it produces fewer and less severe local and general reactions than the subcutaneous injection with no significant reduction in antibody response.

Although the intradermal takes a little longer than the subcutaneous inoculation the saving in manpower and cost of vaccine is great.

Your view, I believe, based on the work of Luippold is that intradermal injection is not suitable for primary immunization.

The air-sea barrier in the Middle East brought into prominence the necessity for yellow fever inoculation.

Although this inoculation does not cause ill effects, the injection is time consuming and the vaccine is expensive. The contemporary vaccination against yellow fever involves the subcutaneous injection of 0.5 to 1 ml. of vaccine. Vaccination by scratching vaccine through the skin is faster, uses less antigen, and also allows a cruder type to be used.

In 1959 in a large number of subjects using two separate scratch vaccinations through 0.02 ml. of a mouse-brain vaccine at an interval of fourteen days, a 98 per cent conversion rate, from non-immune to immune was achieved.

Far East

Acute Respiratory Diseases of Infants. A few years ago this disease was considered to be peculiar to Gurkha infants but cases have since been reported by Army Medical Officers in Aden, Kenya, Nigeria, Ghana, Sierra Leone and in fact in Britain. Sudden death in well nourished neo-natal infants is now recognized as a world wide problem and may result from various causes, including virus diseases, acute gastro-enteritis, pneumococcal and interstitial pneumonia and septicemia.

In Britain the syndrome is being studied by groups in Birmingham, Oxford and London.

The infant patient is pale, cold, pulseless and cyanotic, with râles at the bases, sometimes in coma, and convulsions are a common feature. Examination of the cerebrospinal fluid shows an increase in cells and protein. A number of deaths have actually occurred as the medical officer started his examination.

In Singapore Colonel G. Morrison has made a detailed study of the case sheets. He found that the deaths occurred in British, Chinese, Gurkha, Indian and Malay infants.

At one time these cases were assumed to be due to encephalitis. Morrison now considers death to be due to acute peripheral circulatory failure brought about by overwhelming infections which cause profound toxemia.

The respiratory changes are due to passive congestion the result of cardiac failure. These patients respond well to early cortisone and chloramphenicol therapy.

Encephalitis. Your epidemiologists and virologists are aware that the Far East is rich in diseases which produce encephalitis. Among the Gurkhas, for example, mumps is known to be a common cause while the Japanese Encephalitis B virus, although not always giving rise to encephalitis, from time to time leaps into prominence as it did in Malaya in 1951 when some racehorses became ill with high fever and neutralizing antibodies to Japanese B virus were found in their serum.

A few months later a nurse at the British Military Hospital, Kinrara, developed a severe and fatal encephalitis and Japanese B virus was isolated.

Widespread interest then arose and cases were reported in the military population of Malaya and Singapore. In 1953 the disease was reported from the British Military Hospital, Hong Kong. Its widespread distribution throughout Formosa and South East Asia is now recognized; cases have since

been reported as far west as India.

The danger of comparatively mild endemic diseases to a non-immune military population can be seen.

Other types of viruses are producing bizarre clinical pictures from a feverish headache with a small increase in the cells in the cerebro-spinal to a condition of coma. Fortunately most of these cases recover.

The encephalomyocarditis virus which was recently described as a cause of encephalitis in East Africa has been isolated from one patient and the Herpes simplex virus was traced as the cause of a fatal encephalitis in a soldier.

Virus B as distinct from Japanese B exists as a natural infection in Far East monkeys. Several patients suffering from encephalitis have given histories of contact with monkeys and there have been deaths from encephalitis following monkey bites.

Treatment of encephalitis in adults is by steroids provided the response is satisfactory. If not chloramphenicol and intrathecal steroids are also given.

Hepatic Damage Following Mumps. The publication of an American series of cases has stimulated interest in this condition. Cases are now being isolated.

As mumps is a severe disease among Gurkhas and their dependents, research into the extent of liver damage may prove a very useful study.

May I record my deep appreciation for the splendid liaison and good work of the United States Army Research Unit in Kuala Lumpur. Our patients and the Army Medical Services of the British Army are indebted to the Unit, to that fine institution, the Walter Reed Army Medical Center, and to the entire United States Army Medical Service.

★

CANCER

Site	*Estimated Cases, 1960*	*Estimated Deaths, 1960*
Breast	63,000	24,000
Colon and Rectum	69,000	39,000
Kidney and Bladder	24,000	13,000
Lung	43,000	36,000
Mouth, Larynx and pharynx	19,000	8,000
Prostate	32,000	15,000
Skin	60,000	4,000
Stomach	28,000	20,000
Uterus	40,000	14,000
Leukemia	15,000	13,000
Lymphomas	17,000	13,000

American Cancer Society

The Use and Abuse of Drugs*

By
ARTHUR GROLLMAN, M.D., PH.D., F.A.C.P.†

DRUG THERAPY plays an important role in military medicine as well as in civilian practice. Indeed, the great advances of medicine of the present century have resulted in large part from the introduction of numerous effective therapeutic preparations which make possible the remarkable achievements of present day medicine. The paucity of our therapeutic armamentarium during the first decades of this century as compared to the plethora of drugs available for our use today is striking. As pointed out by Sir William Osler, only four drugs of his time—iron, mercury, ipecac, and quinine—had any specific effect; even these have been largely superseded at present by more effective agents.[1]

The capacity of the synthetic chemist and pharmaceutical manufacturer to elaborate new preparations has increased at a geometric rate. Over 500 new preparations are being introduced each year and there is every reason to anticipate that this rapid accretion of available drugs will continue at an increasingly accelerated rate. This introduction of a host of new effective drugs should contribute no small part to the prolongation of life and the continued progress of medicine.[2]

The availability of the many new drugs and the emergence of drug therapy as an important part of medical practice presents the doctor with a new obligation regarding his knowledge of drug therapy and the art of medication.[3] It has necessitated that he acquire a sound knowledge of pharmacology and pharmacodynamics if he is to utilize at their best the drugs at his disposal, and if he is to avoid the potential harm which unfortunately is inherent in the misadvised use of any medication.[4] It is the purpose of the present paper to point out the general principles underlying modern drug therapy and to call attention to some of its potential dangers.

The art of drug therapy is much more complex than many assume it to be. It involves much more than simply a knowledge of the therapeutic use, dose and usual method of administration of a given drug—facts which are readily acquired from the labeling accompanying most preparations. The use of drugs, effectively and safely, involves not only a knowledge of their action in the body but also of the pathologic physiology of the condition under treatment, the mechanism of action of the drug, its potential harmfulness, and keen observation of the effects which are elicited. Let us illustrate each of these factors by specific examples from practical therapeutics.

The use of a diuretic is often desirable for varied reasons but primarily to increase the volume of the urine. In selecting the best diuretic for a given purpose, we must appreciate the fact that these act by diverse mechanisms. Water, urea and the saline diuretics, for example, act simply by their diuretic effect. Where it is merely desirable, therefore, to increase the volume of the urine with the least effect on electrolyte balance, water is the ideal diuretic. The xanthine drugs act by increasing the glomerular filtration rate; the mercurials by inhibiting reabsorption in the kidney tubule; the recently introduced potent chlorothiazide derivatives, by inhibiting the reabsorption of sodium from the renal tubule.[1] Diuresis may be accompanied not only by the loss of excess sodium and water, which is desired in the case of the edema of congestive heart failure, but also by depletion of the body potassium and extracellular

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* Delivered at the 66th Annual Session of the Association of Military Surgeons of the United States, Sept. 11, 1959.

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fluid volume which are serious side-effects. A knowledge of the mechanism of action of the mercurial diuretics, for example, indicates the futility of using these in the face of a reduced rate of glomerular filtration, as is frequently the case in patients with heart failure, or whose extracellular fluid volume is already depleted.

Another example of the necessity of a knowledge of the underlying pathological condition for which the drug is being administered is illustrated in the use of estrogens in menstrual abnormalities, a commonly misused and misapplied drug for this purpose. Except where the abnormal bleeding is a consequence of a failure of endometrial development during the proliferative phase of the menstrual cycle, the use of estrogen will aggravate rather than remedy an already existent menorrhagia.

The physician must always remember that all drugs are potentially harmful and he must be alert to the undesired side-effects which a drug may induce.[4] Even such obviously innocuous agents as water and oxygen may, if used ill advisedly, do harm. For example, in the face of salt depletion and water overload, the injection of glucose and water will aggravate the underlying condition, intensify vomiting, and accentuate the electrolyte deficit of the body. Likewise, in patients with chronic emphysema whose respiratory center is no longer responsive to carbon dioxide, the administration of oxygen may induce coma and death.

The toxic effects of drugs may be classified as (1) those due to the direct action of the drug; and (2) those resulting from an idiosyncrasy on the part of the patient. The induction of the undesirable symptoms of Cushing's syndrome as induced by the glucocorticoids, for example, is a result of a direct action of these drugs. Many patients also manifest an idiosyncrasy to certain drugs and the physician should be alert in recognizing such intolerance which is quite common to even such widely used agents as the barbiturates, aspirin, morphine, *etc.* Repeated use of many drugs also leads to an acquired sensitization which may have serious consequences. This, for example, is the case in sensitivity to penicillin. Such reactions as fever, skin reactions, depressions of the bone marrow, eruptions, and arthralgia are well known but must be detected in their incipiency and the drug withdrawn if serious consequences are to be avoided.

With the availability of numerous drugs for the same purpose, a considerable knowledge of the subtle differences between the various drugs is essential before one can decide which is to be preferred in any given patient. In many cases only trial permits one to decide and experience will lead one to use one or another drug in a given instance. The claims often made for the advantages of a drug because of its greater potency are often deceptive. Considerable experience is necessary before one can accept the superiority of a newly introduced drug as opposed to an older one merely on the basis that a smaller dose is required for eliciting the same effect.[2]

Among the important pharmacological actions of a drug which are of importance in its application are the rate, degree, and site of its absorption; its latency in action; and its route and rate of elimination. These are all highly important in utilizing a given drug.

The use of potentially toxic drugs may be justified in patients suffering from serious illness. The same drug, because of its potential harmfulness, would be contraindicated in a relatively minor disturbance in which perhaps adequate although not as complete relief would be obtained from a safer drug. Thus, in relatively mild degrees of rheumatoid arthritis where adequate relief is obtained by heat and simple analgesics, the administration of glucocorticoids are contraindicated, whereas the same drugs would be used without hesitation and in sufficiently large doses to induce many undesirable and potentially lethal effects in the case of such a disease as pemphigus which if untreated is attended by high mortality.

For optimal effects, dosage must be carefully adjusted. The average dose is the one

usually effective in a majority of individuals but any one individual may require much less of the drug or might need several times the average dose to obtain optimal results. This is important, for example, in the case of digitalis and frequently in the use of the antibiotics.

Many of our therapeutic agents are specific in the sense that they actually overcome the cause of disease, as in the case of the antibiotics, the use of hormones as substitution therapy, *etc.* Others, on the other hand, modify the body's reaction to disease, as is the case with the glucocorticoids when used for their metabolic, anti-inflammatory and anti-allergic actions, in which case the purpose of their use is to prevent undue reactions on the part of the body.

The use of drugs for symptomatic control is illustrated in the great variety of drugs used in the management of hypertension. Many drugs are capable of lowering the blood pressure, since this is a labile function subject to control by a variety of mechanisms, including the muscle tone of the arterioles, the autonomic ganglia, the central baroreceptors, *etc.* However, emphasis must be placed on the fact that the elevation of blood pressure, per se, is only one manifestation of the disease and its reduction under certain circumstances may be harmful.

The modern physician has at his disposal drugs of remarkable efficacy against many disorders. His use of these agents to their best advantage will be proportional to his knowledge of their action and the nature of the pathologic process which he wishes to modify. He must always be alert to their potentialities for harm in order to avoid the dangers inherent in the unguarded use of these powerful agents.

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"John's absolutely fearless—he turned his headlights right back on high beam when the other driver wouldn't dim his."

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Three Years' Experience with Intensive Treatment and Recovery Unit in Medicine and Surgery*

By

CAPTAIN LEWIS L. HAYNES, MC, *U. S. Navy*

AND

LIEUTENANT COMMANDER PHYLLIS HARRINGTON, NC, *U. S. Naval Reserve*†

(With four illustrations)

The complexity of modern intensive therapy in medicine and surgery, and the shortage of nursing care has created the need for a specially well equipped unit manned by highly trained personnel. The concentration of these problems in one unit, regardless of sex, rank, or age, has been functioning quite successfully at the Chelsea Naval Hospital.

Such a unit can be put in operation with existing facilities, and with no over-all increase in personnel or patient cost. The combining of the Recovery Room and Intensive Therapy are essential, for who can tell when recovery stops and intensive therapy starts.

Advantages, disadvantages, and early problems are discussed here.

THE Intensive Therapy Unit is an especially designated area in the U. S. Hospital, Chelsea, Massachusetts, where postoperative, injured, seriously or critically ill, medical and surgical patients are concentrated with the best nursing care and most efficient treatment, regardless of rank, age or sex. This highly-specialized Unit is not unusual as the idea of progressive care in hospitals has been going through a gradual metamorphosis towards general reality during the past five years.

All of the large hospitals in the Boston area have established these units, most within the past few years. For the smaller hospitals, having gone through the expense and problems of establishing a Recovery Room area during the past decade, the thought of the added cost for the establishment of Intensive Therapy Care Units has been frightening and prohibitive. To eliminate the necessity of establishing both a Recovery Unit and a Intensive Care Unit, we felt very strongly that the Units, could be, and should be combined in a hospital of our size which has an average census of approximately five hundred patients. The need for the combination becomes more obvious when one realizes that it is impossible to tell when recovery stops and intensive therapy begins.

In 1955, the shortages of nurses and trained personnel, the great difficulty in obtaining special watches, and the almost impossibility in obtaining private duty nurses, plus a marked increase in highly-specialized surgery, such as thoracic and cardiovascular surgery, made the need for this Unit imperative.

PHYSICAL PLAN

A standard thirty-four bed ward, close to the Main Operating Room of the hospital was selected for this Unit. This had been a convalescent-type of ward, and its patients were quickly absorbed within the hospital set-up. The ward required minimal modification.

It was decided to install nineteen beds, four cribs, and one isolette for available patient care. In the beginning it was felt that all the beds should be on the open ward for easy availability and vision by the personnel assigned. However, one side of the ward was made into three cubicles, two of four-beds each, and one to contain the pediatric cribs and the isolette. The cubicles are made with plexiglass walls to make it possible for the nurse-in-charge to view all patients at one time. They also have draw curtains so that temporary privacy could be obtained

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when needed. Oxygen-wall outlets and suction-wall outlets were installed. These outlets were placed in strategic areas, and if needed, two patients could be taken care of from one outlet.

One end of the ward was left open for a guerney area for those patients of short-range duration, such as D & C's and spinals who could remain on the guerney for their recovery period, and would not remain in the area after three o'clock in the afternoon. Space between beds is adequate for a recovery guerney when needed. The solarium end of the ward was converted into an isolation room. This, however, has seldom been used.

TABLE 1

STAFFING

Minimum Nursing Coverage	
0700–1500	A Charge Nurse and 2 Staff Nurses
1500–2200	2 Nurses
2200–0700	2 Nurses
TOTAL	7
Minimum Corpsmen Detailed	
0700–1500	3
1000–1800	1
1500–2300	3
2300–0700	2
TOTAL	9

STAFFING

The staffing pattern necessary to meet the nursing needs of this Unit has been established and found to be workable. However, to maintain adequate coverage twenty-four hours, seven days a week, this pattern must be flexible to allow for increases in patient load and intensive therapy. The Intensive Care Unit should have a regular staff at all times. The minimum nursing coverage we have found to be necessary for this size unit is shown in Table 1.

The corpsmen in this Unit work eight hours, except for their duty weekend which is 0700 to 2100, with four hours off during the shift. Every other weekend they are off duty, and night duty for two weeks is an established policy.

Due to the extreme pressure on these nurses and corpsmen, everything must be done to keep their morale high, and to make them feel secure, both mentally and physically. It is deemed necessary that all personnel work eight-hour shifts, and that leave will be granted when requested.

A good orientation program for all members of the staff, and an adequate educational in-service program is necessary for this Unit. The morale is high, due to the esteem gained from being a member of this highly-specialized team. Frequently the team voluntarily remains on duty to care for an increased work-load, or to follow the unusual

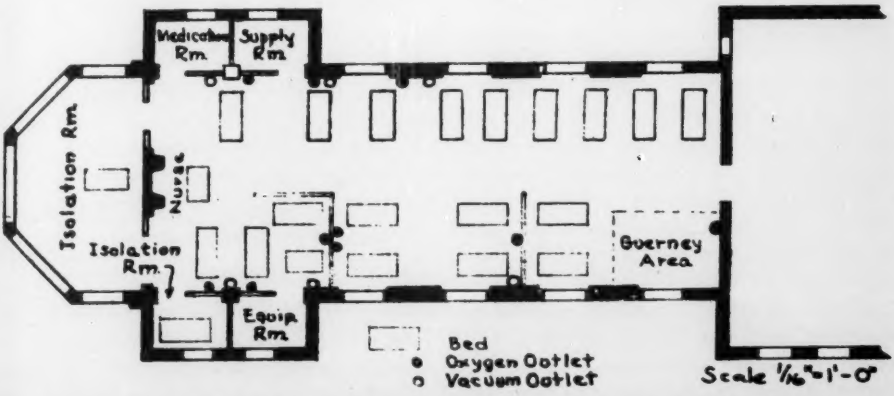
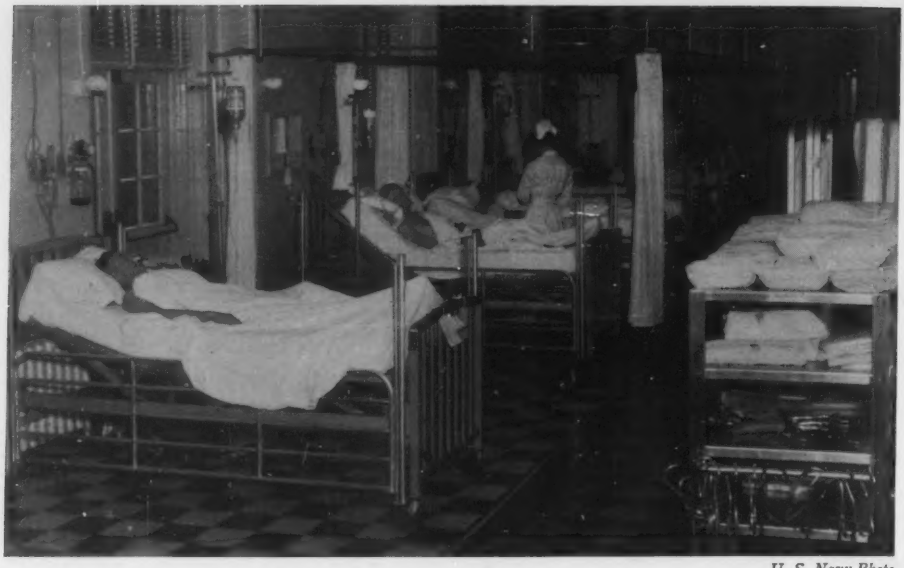


FIG. 1. Floor Plan of Intensive Treatment Unit, U. S. Naval Hospital, Chelsea, Mass.



U. S. Navy Photo

FIG. 2. View of Ward.

case in which they have developed a special interest.

The Intensive Therapy Unit has relieved the work-load on the other wards. It makes staffing of these wards less of a problem, and has made the eight hour day possible for all ward corpsmen because with the patients needing intensive treatment, being concentrated in one unit, less general ward corpsmen are needed.

COST

The cost of alterations and establishment of the ward was minimal. In January of 1956, the initial cost consisted of only the installation of the cubicles, which were not entirely necessary, and the purchasing of curtaining for screening purposes. Oxygen tanks and portable suctions were used on the patients, and emergency equipment throughout the hospital was collected and placed on the ward.

As time went on, in-wall oxygen was installed at the cost of $1860, and at a later date, the in-wall suction was installed at a cost of $3,331. The low cost on the suction was, in part, attributed to the fact that the compressor that was used was one which had been kept in storage for use with the old flame photometer. It has been more than adequate. The overall cost per patient was not increased over the preceding year, and although it does cost much more to keep a patient under intensive care, the diminution in use of portable suctions, oxygen tents, oxygen tanks, and duplication of special equipment throughout the hospital has almost compensated for the cost.

The cost of saving of one life, however, cannot, of course, be computed. I can recall at least six incidents in the last year where dramatic action on the part of ward personnel saved a life which otherwise might have been lost prior to the institution of intensive care. For example, during the past year two cardiac arrests have been successfully resuscitated on the Unit.

EXPERIENCE

The Unit was commissioned on the 4th of January, 1956, and this was accomplished in spite of considerable opposition. The most difficult hurdle was to adjust all hands to the idea of mixing ranks, sexes, and ages on one

big open ward. I would like to state now that with 7,780 admissions to the ward to date, we have not had one single complaint from either sex.

As a matter of fact, one of our biggest problems has been in trying to get the long-range patient off the ward, because of his awareness of the care that he or she is receiving, and the sense of security that they get from being under constant observation, and knowing that they are in good hands. The same resistance to transfer from the ward is encountered among the next-of-kin.

The year 1958 is fairly typical of the two preceding years. Admission statistics are given in Table 2.

TABLE 2

ADMISSION STATISTICS

Admissions to Unit 1/4/56 to 12/31/58	7,780
Total Admissions—1958	2,357
Medical	114
Surgical	2,243
Women	708
Children	405
Retained Longer Than 24 Hours	574

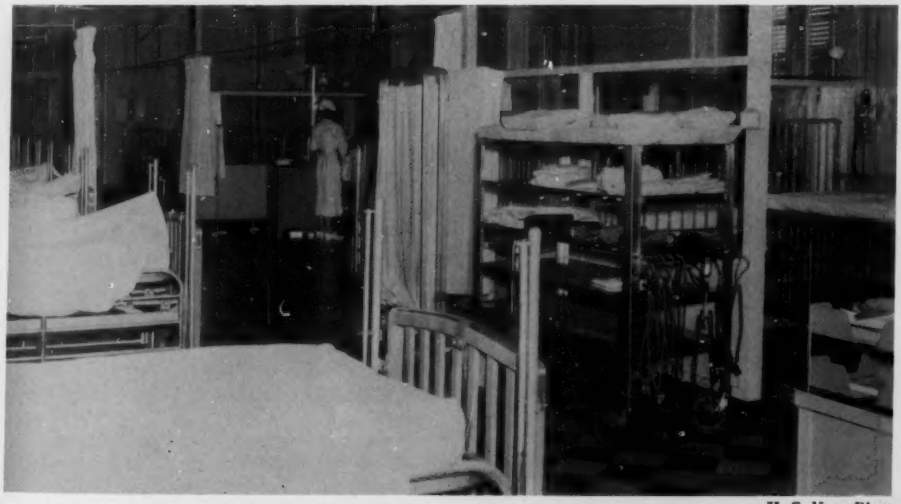
The total number of patients admitted to the Unit was 2,357. Of this number, 114 were medical patients and 2,243 were surgical. 405 were children, and 708 patients were women. A total of 574 were retained longer than 24-hours for intensive treatment. The remainder were anaesthesia recovery, and for the most part were off the Unit by 1800 of the day of surgery.

There were 28 deaths on the ward, 15 medical and 13 surgical. The efficiency of the Unit is emphasized when one realized that this number of patients were cared for by seven nurses and nine corpsmen as a total staffing requirement.

Head injuries on the whole remain on the ward for the longest period. However, one severely burned patient, a young girl with 74%—third degree burns, was on the ward for one year. Her survival can be attributed to the efficiency of the Unit.

There have been no known cross infections, and long-range patients have had fewer complications than was evident prior to the establishment of the Unit.

In planning any such ward, provisions should be made for visitors and next-of-kin. Because most of these patients are seriously or critically ill, the families would naturally



U. S. Navy Photo

FIG. 3. View of Ward.

be in the immediate and worrisome vicinity. A solarium was arranged, close to the unit, with reading material, easy chairs and sofas which were long enough to allow reclining during the night. The next-of-kin only were allowed on the ward, and then for only very brief visits, lasting no longer than a few minutes at a time. Without exception, the next-of-kin are impressed with the care that their loved ones are receiving, and become less and less of a problem as the illness continues.

The majority of medical cases admitted to the Unit have been hepatic comas, acute coronary artery occlusions, or bleeding peptic ulcers. Terminal care cases are not accepted on the Unit.

The Isolation Room at the end of the ward has been used on occasions for infectious cases. Strict isolation technique has been carried out. This, however, has always required an increase in the amount of personnel on the ward.

The Unit is under the supervision of the Chief of Surgery, and the supervision of the nurse-in-charge of the Unit. Each service, however, is directly responsible for the medical care of their own patients, it being the Chief of Surgery's responsibility to see that their orders are carried out, that all patients are cared for, and that all emergency equipment is available and ready for use. The smooth, easy and efficient function of this Unit has made it an absolute essential at this hospital.

It should be pointed out that this area is one in which all services work together for the common good of one patient, and although the senior surgical resident is in immediate charge of the care of all patients, he works in close harmony with the other services.

U. S. Navy Photo

FIG. 4. View of Ward.

CONCLUSIONS

1. The establishment of an Intensive Care Unit in combination with a Recovery Room can be accomplished with existing hospital facilities and a minimum of cost.

2. The Recovery Room and the Intensive Care Unit should be combined, for who can tell when recovery stops and intensive therapy begins.

3. The establishment of this Unit has eliminated the need for special watches, and special nurses in this hospital.

4. Patients in this Unit receive not only the best of nursing care, and the use of highly-specialized equipment, but are in an area where all services are working together for the good of the patient.

Team Planning in the Veterans Administration Nursing Service*

By

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HISTORICAL documents reveal that between 1922 and 1924, when Veterans Hospitals were only 45 in number, there was already recognized the need for special training in tuberculosis and psychiatric nursing in order to provide the kind of nursing care needed by the veteran patient. In the absence of nurse educators in each of the hospitals, courses were conducted in psychiatric nursing for Veterans Administration Nurses at St. Elizabeth's Hospital, Washington, D.C. A program which provided theory and experience in tuberculosis nursing was developed at Veterans Hospital, No. 41, New Haven, Connecticut.

We in the Veterans Administration Nursing Service are grateful to those in our Department of Medicine and Surgery who, through their farsightedness in 1946, recognized that provision must be made for educational leadership in the Nursing Service of each of our hospitals. That discerning group of planners believed that on-the-job education which would bring about improved technical competencies and depth of professional knowledges should be considered a right of every nursing employee of Veterans Administration, not a privilege. Looking back over the last ten years we are aware that, with the rapid opening of hospitals, expansion of services, and changing trends in medical care we would not have been able to keep abreast of the times if we had not placed emphasis on inservice education as a pivot for hospital work in our service.

In Veterans Administration Nursing Service we have chosen to use the simplest available definition for "inservice education" namely, "Assistance toward better performance of the job that is to be done." We believe that programs designed at each of our hospitals should result from a joint identification of teaching-learning needs by the Chief, Nursing Service and the Assistant Chief, Nursing Education. For the best possible medical care the kinds of educational programs developed to meet the needs of the entire nursing service must, first of all, be job related. They must be developed within an administrative structure which provides for:

(a) participation by all members of the nursing staff, within their own area of specialization and sphere of competence, in the program's planning and implementation.
(b) clearly defined lines of authority and delegation of responsibility.
(c) clarification of roles of all members of the nursing staff.
(d) establishment of channels of communication between all services and individuals.[1]

It is noted that in those of our hospitals where nursing leadership provides a permissive, informal atmosphere in which there is interest in and understanding of each member of the nursing service, there also flourishes an educational program which is group planned—group implemented—and group evaluated. You may expect, further, to find quality nursing care in these hospitals, for in such an administrative atmosphere patient-centered teaching and learning is that which is expected by the group.

The Veterans Administration operates 170 hospitals, housing over 121,000 patients. Approximately twice as many non-professional

* Presented at the 66th Annual Convention of the Association of Military Surgeons of the United States held in Washington, D.C., November 9-11, 1959. These remarks preceded the presentation of a skit on nurse team planning.

workers are employed in the Nursing Service as are professional nurses. We have more than 14,000 registered nurses, 900-1000 licensed practical nurses, and more than 28,000 nursing assistants on duty at present. Thus you can see that "the assistance toward better performance of the job that is to be done" to which I referred earlier must be systematically approached, diligently pursued, and constantly evaluated. For the professional nurse who comes into our service there must be individualization of planning. For the non-professional members of the service minimum requirements of a stated number of hours of theory correlated with closely supervised clinical practice and evaluation during a period of traineeship must be provided. For the licensed practical nurse there must be closely supervised and carefully planned experiences during her early months with us in order that determination of potential can be made, and long-range plans made for her increasing contribution to the Nursing Team.

Although designed for varying levels of comprehension, the teaching for each of these groups should have woven into it the basic philosophy of the Nursing Service and the role it plays in the workings of the larger health team in Veterans Administration in its mission accomplishment. Comprehensive nursing care is, in a hospital where the large health team is comprised of persons from many disciplines, only one component of total patient care, however, its importance should not be underestimated. Briefly, I mention here the desired instructional ingredients for each of these constituents of nursing service if he/she is prepared to embrace the philosophy of team nursing. The learning must have as its objective the improvement of skills in:

(a) providing physical care,
(b) reccgnizing emotional needs of patients,
(c) carrying out prescribed treatments,
(d) teaching the patient self-care activities,
(e) teaching the family the essentials of nursing care,
(f) giving the patient health guidance,
(g) encouraging the patient to assume his share of responsibility for recovery.

Many young professional nurses on entrance to our service have not had experience in team leadership. Through joint effort of the Assistant Chief, Nursing Education, the Clinical Supervisor, and the Head Nurse, a plan is developed whereby this nurse can be prepared for such activity gradually. Participation in the team conference on the ward where there is healthy interaction between team members and where contributions from each of these members are expected, acknowledged, and appreciated helps the newcomer, and is the first step in this developmental process. In these conferences no communication is ever lost. An individualized plan of nursing care is eventually developed for each patient and it becomes a matter of pride to each of the team members that he had a part in the design. Having been a contributor to the plan for care makes carrying out of one's responsibility as a team member more satisfying. As cohesiveness between team members increases, feelings of self confidence develop, and the new nurse begins to feel that she "belongs." It is not long before she can see beyond the few patients who have been her major responsibility in the team's activity. She is pleased with her progress and is stimulated to assist other team members in solving some of the small problems they are encountering with the less helpless patient.

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A New Approach in Teaching for the Improvement of Patient Care*

By

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THE PRESENT trend in hospitals is to utilize additional personnel to assist the professional nurse. It is with growing recognition that we realize—there is a wide variance in the training of these auxiliary groups.

Let us consider the training of the Navy Hospital Corpsman, a non-professional person in our Naval hospitals. First, in Hospital Corps School the class time spent in nursing subjects allows for only a very basic curriculum. Second, the length of the course does not permit sufficient experience in direct follow through with patients in the ward situation.

From these first two considerations we can see a third problem—the only opportunity for the hospital corpsman to learn advanced nursing procedures is after his assignment to hospital duty.

From Chapter 8, Manual of the Medical Department,[1] under "General Duties" we note that the Navy Nurse Corps Officer has a twofold mission: ". . . to provide nursing service . . . and *to provide instructions in nursing* to enlisted members of the Hospital Corps and other personnel assigned. . . ."[2]

Specifically, the Charge Nurse (of a ward) is to: ". . . instruct enlisted members of the Hospital Corps, and other personnel assigned, in the performance of their duties attendant upon nursing care. . . ."[3]

For clarification, this leads to another point. In the past, whenever NURSING became concerned about a particular problem, the first action taken was to demonstrate that nurses could contribute in meeting the problem. How was this done?—By SPECIALIZATION in that *one area.* For example, "Prenatal nurses," " 'T.B.' nurses," "Cancer nurses," " 'Polio' nurses. . . ."

But it was soon recognized that specialization itself created problems, such as (1) overlapping when there was more than one nurse working with the same group; or (2) the inevitable gaps where no one felt responsible, "it might have been covered by the other person."

Add to this field of specialists the Ward Instructor—another "special person" created to demonstrate that nurses could do on-the-job teaching.

Now, with continued expansion of facilities, we find that hospitals are in need of professional nurses, not always having the excess numbers to delegate several as Ward Instructors. But as a "specialist" the Ward Instructor has contributed. She showed the way—proved that nurses could carry out teaching programs in the ward situation.

PITFALLS TO OVERCOME

When confronted with planned teaching, nurses can give all kinds of reasons why they do not conduct regular ward classes.

The problem is not entirely the busy ward routine, but mainly the lack of time to gather reference materials, make demonstration essentials, and prepare visual aids.

Upon further investigation, other handicaps can be pointed out:

(1) no central source where teaching materials can be obtained,
(2) lack of direction to encourage class presentation,
(3) no follow through evaluation of the teaching done.

In order to discuss how the Nurse Corps,

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TABLE 1

FORMAT OF A WARD TEACHING GUIDE WITH EXPLANATORY NOTES

(unit number)
(GUIDE TITLE)

INTRODUCTION

a sentence or two that the nurse might use to refresh her memory about the experience.

TERMS

listing of unfamiliar terms that the nurse may wish to "look up" or explain.

TOOLS

all equipment that would be needed to demonstrate.

IMPORTANT STEPS	KEY POINTS	VISUAL AIDS
Discussing facts nurse may wish to choose from or eliminate when making plans for her own class.	Skills necessary to: a perform experiences b protect worker c make work easier d patient comfort	Suggested items to aid auditory learning

U. S. Navy, is overcoming these difficulties let us outline briefly the background.

FIRST STEP—DEVELOPMENT OF TEACHING —"SOMETHING FOR ALL"

It started with frequent requests for teaching materials—requests that soon began to form a pattern. That is, from a variety of patient care areas came similar requests: Oxygen by tent, preoperative care, postoperative care and so forth. These were the experiences the nurses considered most necessary to teach in order to improve patient care in their wards.

But how to supply what they needed, in a way that it could be used by everyone, was the question.

In the beginning a curriculum was planned using as a basis—those experiences most requested. For each separate experience there was designed a WARD TEACHING GUIDE—a concise written fact sheet, guidelines, materials adopted from a procedure but not describing every detailed step that makes the general procedure too cumbersome to use as a teaching tool. ALL WARD TEACHING GUIDES followed a like format:

(a) *INTRODUCTION*—a sentence or two that the nurse might want to use to refresh her memory about the experience.

(b) *TERMS AND TOOLS*—or those items that remind her to show the equipment needed and explain any unfamiliar terms.

(c) *IMPORTANT STEPS* or those activities that advance the experience from one step to another and on to completion. In deciding what material she wishes to present in her own class the nurse can glance quickly down this section; (1) choose those items she wishes to include and (2) eliminate those she does not wish to include. She can refresh her memory by noting the KEY POINTS and any additional references she may wish to use.

(d) *KEY POINTS* or those skills necessary to: (1) perform the work that will facilitate the procedure, (2) protect the worker, patient or materials, (3) make work easier, i.e., timing and so forth, (4) give special information for the patient on how his comfort may be effected.

(e) *VISUAL AIDS* or those items to aid auditory learning.

Table 1 shows the written WARD TEACHING GUIDE—a resource of facts—from which the nurse can *"bring back" known material.* Then, she is ready to formulate her own class plan—designed to meet the needs of her own ward unit, for it is she who knows her personnel, their needs and learning abilities.

The Guide may be several pages or a single sheet that can serve as basis for formulation of an entire class (Table 2).

A group of guides about similar experiences are placed together in *one UNIT.* For example the OXYGEN THERAPY UNIT would include Ward Teaching Guides on: Oxygen by tent, by catheter, by mask and by piping-in equipment.

But the Ward Teaching Guides are only ONE HALF of the *Planned Resource Unit for Ward Teaching.* In addition, VISUAL AIDS—fold out charts, flip cards, hospital forms, sample charting, flash cards, photostatic copies of equipment and anatomical charts are ready for use in one envelope.

TABLE 2

SAMPLE, IN PART, OF A *One Page* WARD TEACHING GUIDE
(Materials from which a nurse may wish to plan her class.)

(unit number)
(GUIDE TITLE)

—TRACTION REMINDERS—

CHECK	REPORT OR REMEDY
1. Check circulation in the extremity.	1. Report pallor, cyanosis, coldness and swelling.
2. Check condition of skin around tape.	2. Report irritation, pimples, purulent discharge.
3. Check foot drop.	3. Report any inversion of foot in traction for if this happens, is likely to cause partial or complete paralysis and patient will not be able to turn foot outward.
4. Check pulleys.	4. Remedy pulleys that are stiff, not moving or with shallow groove that will allow rope to slip off easily.
5. Check foot spreader.	5. Remedy contact with end of bed when patient slips down in bed.
6. Check weights.	6. Remedy if too close to pulley. Should be considerable distance below pulley.
7. Tongs.	7. Report if they slip from their bony anchorage because this exerts traction on soft tissues—CONSIDERABLE PAIN.
8. Dressings.	8. Remedy if covering fingers or toes because these areas are to be watched for cyanosis.
9. Check bedclothes.	9. Remedy if resting on toes opposite extremity causing poor alignment.
10. Check feet.	10. Remedy any unnatural position—rotation outward or inward should be reported.
11. Check rope daily.	11. Report any fraying.
12. Check comfort.	12. Remedy any sagging areas in bed.

Preplanned resource materials are designed to assist the ward nurse in WHAT *can* be taught, HOW it *can* be taught and DEVELOP new skills in varied teaching methods.

Method of Implementation

Although this discussion is concerned primarily with the device of teaching we should consider also a plan for implementation. Let us review how some Naval Hospitals have initiated this system.

When supervisors, ward nurses and nonprofessional personnel were interviewed, there were expressed certain needs regarding improvements in ward teaching. These had centered about: revisions in class scheduling, availability of teaching materials and interest stimulation. Findings from surveys of past teaching schedules showed many repetitions, and that subject matter was confined to a ward's own procedure. From interviews with new nurses as they came to the hospitals, it was found that most had some ward teaching experiences, but only a small percentage had studied teaching technics.

Launching a more organized teaching program is not an easy undertaking. We must recognize that replacing old ideas with new ones often meets with resistance. Any proposed system has to be carefully explained and clearly defined to everyone concerned. All supervisors and ward nurses must be notified that a new ward teaching program is under consideration.

What Was Proposed. First, the supervisory group—Explanation of the Idea, *Resource Units for Ward Teaching.* The report was made that test classes had been taught with the resource materials; the classes were informal, lasting 15-20 minutes. The testing method was one of selective sampling to determine the material's effectiveness on various services for possible new design or redesign.

What Method Could Help. Explanation of the Revision in Scheduling. The form for scheduling weekly classes for a month period was changed to include a space for length of class period and number in attendance besides the time, date, place, subject and instructor. This was for statistical purposes as well as a record of classes taught. The form could be kept on the bulletin board for quick reference for both the ward personnel and supervisor.

The one requirement in scheduling would be that a subject in a FOREIGN area (experience not found on the ward) be included as one class each month. This was for additional experience of the personnel as they are called on special duty in areas other than those where currently assigned.

There was suggested a monthly schedule (Table 3) that would provide a variety of class subjects, as for example, on a medical ward:

one class on a disease or nursing care of a condition currently on this ward	MYOCARDIAL INFARCTION
one class on an experience often met on this ward	EKG
one class on an experience that may be found on most wards	CARE OF THE DEAD
one class on an experience NOT found (foreign) on this ward	TRACTION AND CASTS

How It Could Be Done

Available from a central office would be Resource Units covering twenty different units: also available would be film lists, journals, pamphlets and textbooks for ward use. Using the ward's schedule, the supervisor could obtain the materials requested and distribute them two days prior to the scheduled class. This would avail the nurse with a choice of materials from which she could plan her class.

Reaching People

To further insure complete understanding of the proposed program, half-day workshops were provided for both supervisors and ward nurses. These workshops gave the groups the initial practice in teaching technics through lecture, demonstration, role play. The emphasis was the utilization of resource materials to *shorten preparation time* and *to shorten class presentation time.* Following the work periods, evaluation sessions were held.

It's Going Now

Today it is felt that our major handicaps have been overcome. Improved ward instruction has been increased greatly by the use of the *Resource Units for Ward Teaching.*

The new scheduling system has discouraged weekly class repetition and has given the learner an opportunity to obtain practical experience in areas other than those to which he may be currently assigned. He is obtaining his continued training and experience with advanced procedures. The monthly schedule of classes is a cooperative effort of all ward personnel. Charge nurses discuss the next schedule at the morning ward conference and post subject sign-up sheets on the bulletin board. A schedule of all classes to be taught throughout the hospital is posted in designated areas in order that personnel from other areas may select and attend classes in which they are interested.

And It Has Been Said

Since the start of the Resource Units for Ward Teaching, the supervisors have expressed . . . "through increased stimulation and ward class attendance, patient care had shown improvement."

To the ward nurse, the resource materials—preplanned guide and visual aids—have meant many things . . . "Enables me to take one part of a Resource Unit, elaborate and go into detail about it." . . . "Have pointed out a variety of teaching methods."

Because of the limited teaching experience of many of the ward nurses, the availability of resource materials gave them many ideas for future ward classes. . . . "They have shown how visual aids and charts could be utilized when classes are given on other than Resource Unit subjects." . . . "The Resource Units have helped me with planning a class

Table 3

Sample Monthly Ward Teaching Schedule Shown for Two Months on Each Type of Service—Medical, Surgical and Orthopedic

Assigned to:	X MONTH	Y MONTH
Medical		
Own*	Disease	Disease
Allied	Oxygen Therapy	Bennett Pressure
Cross	Binders	Collection of Specimens
Foreign	Suction Apparatus: Chaffin-Pratt Phelan Wangensteen	Ear, Eye, Nose & Throat
Surgical		
Own	Disease	Disease
Allied	Preoperative Care	Colostomy Care
Cross	Hydrocollator	Traction & Casts
Foreign	Respirator Care	Diabetic Care
Orthopedic		
Own	Disease	Disease
Allied	Stryker Frame	Body Mechanics
Cross	Alternating Pressure Mattress	Tracheotomy
Foreign	EEG, EKG	Thoracentesis, Paracentesis

* Definition of Terms:
Home ward—where corpsman currently detailed.
1) own—The disease or nursing care of a condition currently or often found on home ward.
2) allied—experiences often used on home ward.
3) cross—experiences that may be found on most wards.
4) foreign—experiences not found on home ward.

TABLE 4

WARD TEACHING GUIDES

Table of Contents

Unit 1 *Ward Management and Records*
- a guide to admitting the patient
- b guide to admitting from another ward
- c guide to transferring the patient
- d guide to discharging the patient
- e guide to care of the dying—discharge after death

Unit 2 *Nursing Administrative Procedures*
- a guide to nursing care plan and supplementary cards

Unit 3 *Oxygen Therapy*
- a guide to catheter technic
- b guide to mask technic
- c guide to tent technic

Unit 4 *Positive Pressure Therapy*
- a guide to Bennett positive pressure

Unit 5 *Respirator Therapy*
- a guide to tank type

Unit 6 *Tracheotomy Care*
- a guide to daily care
- b guide to rehabilitation

Unit 7 *Isolation Care*
- a guide to handwashing technic
- b guide to mask and gown technic
- c guide to solutions used

Unit 8 *Skeletal Care*
- a guide to Stryker frame
- b guide to Foster bed

Unit 9 *Administration of Parenteral Fluids*
- a guide to intravenous therapy assistance
- b guide to blood transfusion assistance
- c guide to hypodermoclysis assistance
- d guide to fluid balance maintenance

Unit 10 *Nasal and Oral Intubation*
- a guide to Levin tube technic
- b guide to assistance with Miller-Abbott tube
- c guide to assistance with Cantor tube
- d guide to gastric gavage
- e guide to assistance with gastric lavage

Unit 11 *Use of Suction Apparatus*
- a guide to Phelan Wangensteen suction

Unit 12 *Specimens*
- a guide to urine specimens
- b guide to stool specimens
- c guide to sputum specimens
- d guide to blood specimens

Unit 13 *Bowel and Bladder Care*
- a guide to enema technic
- b guide to colostomy care
- c guide to bladder irrigation

Unit 14 *Special Skin Care*
- a guide to care for incontinence
- b guide to care for decubitus ulcer

Unit 15 *Applications as Treatments*
- a guide to application of heat
- b guide to application of cold
- c guide to sitz bath
- d guide to heater, heat treatment pad (hydrocollator)

Unit 16 *Application of Binders*
- a guide to sterile dressing technic
- b guide to scultetus technic
- c guide to abdominal technic
- d guide to T-single and double technic
- e guide to Montgomery technic
- f guide to butterfly technic

Unit 17 *Surgical Care*
- a guide to skin preparation
- b guide to vital signs
- c guide to oral hygiene
- d guide to postoperative care

Unit 18 *Orthopedic Care*
- a guide to traction technic
- b guide to cast technic
- c guide to amputation care

Unit 19 *Ear, Eye, Nose and Throat*
- a guide to ear, eye, nose and throat instillations eye ointment

Unit 20 *Care of the Diabetic Patient*
- a guide to care in coma
- b guide to care in shock
- c guide to teaching the diabetic

on another subject—ideas for equipment, pictures and charting."

Compendium

Preplanned Resource Units can assist the ward nurse in WHAT and HOW it *can* be taught, and further, DEVELOP new teaching skills. The guide itself is designed to *"bring back" known material* to the nurse. Given the Resource Unit before a scheduled class she may refresh her memory with the printed guide; the accompanying visual aids are ready to supplement her verbal presentation. Because she knows the subject—a nursing procedure or an aspect of a disease,—the guide can help formulate her sequence of material presentation. If she does not desire to teach the entire subject, there are charts and break-downs that may be used. A single page on hints and precautions of a procedure or a photostat of equipment often can be the basis of an entire class.

References

[1] Department of the Navy, Bureau of Medicine and Surgery, Manual of the Medical Department, U. S. Government Printing Office, Washington, D.C., Chapter 8 (1957).

[2] *Ibid.*, p. 3.

[3] *Ibid.*, p. 4.

TWIN TALES:

A New Look at the Flea and Looking at It from the Viewpoint of the Louse

By Joseph Hirsh*

A NEW LOOK AT THE FLEA

WERE it not for three central facts—its ubiquity, its devastatingly high mortality and its virtual ineradicability—plague would be a matter largely of interest to medical historians. But the fact is that plague is far from an exotic disease, of ancient times, remote countries and alien climates. It is universal in its residence, in its movement and in its impact. This means, among other things, that it is far more common in the United States and in Latin America than is generally appreciated.

It was first recognized in San Francisco at the turn of this century. Since then it has been reported in over 131 counties in 15 of our western and southern states. Between 1900 and 1951, 539 cases were reported for the country as a whole with a mortality of 63 percent. While ground squirrels and other wild rodents are the main reservoirs of infection in other than "domestic" rats, practically any flea-bearing mammal represents a threat.

Despite enormous advances in therapy, improvements in vaccines and other methods of prevention and control, plague remains a fearsome disease. The one fundamental advance in control which grew out of the field experience of World War II rather than the laboratory involves the arthropod vector rather than the mammalian host, hence the emphasis in this report.

Plague shares with other arthropod-borne diseases that peculiar natural history which assures its continuity as long as there is history to write. This view is based on the observation that the successful conquest of particular vectors of any diseases does not necessarily insure the successful eradication of that disease. Dr. Karl F. Meyer, distinguished plague hunter for half a century, has emphasized this point citing yellow fever as an example. *A. aegypti*, which he compares to *R. rattus* in the case of the plague, is an urban dweller. *A. haemogogus*, like the wild rodent, is a country cousin. Eradicating the *aegypti*, he points out,[1] has not eliminated yellow fever, for, living high in the jungle tree tops out of the way of man and generally not a transmitter of human disease, *A. haemogogus* becomes a vector of human yellow fever when he is borne earthward by a monkey or a fallen tree. Extending the analogy to rats and fleas Meyer suggests that the control of particular species similarly does not insure the elimination of plague. It is as if a subtle life intelligence insures its own continuity through adaptation and the parasitism of new and different species.

No restatement of the plague would be complete without some definitions and delineation of the main character. Almost every story has its array of heroes, villains and victims. Like that of many other diseases in which vectors play such a prominent part, plague has no heroes—only victims. And oddly enough its hosts, all three of them—rat, flea and man—are its victims. If a villain must be found it is in the person of *Pasteurella pestis*—at first glance not a very impressive fellow.

A short, plump rod, 0.5 to 0.7 microns in width and 1.5 to 1.75 microns in length, it

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goes in for pleomorphism but only, it must be said with the utmost candor, as it gets on in age. Despite its rugged appearance and protective capsule, it is a rather fragile organism, destroyed in sunlight in 4 to 5 hours and by desiccation in 3 to 4 days. But, given a chance in the protected environment of pus or sputum, these organisms may live for 8 to 14 days, and, indeed, in the putrefying blood and tissues of cadavers for weeks and months, Put them in the deep freeze with other delicacies, if you must, and they remain viable and virulent for years.

It is this fellow who is responsible for all three main forms of plague—bubonic, pneumonic, and septicemic—plus a minor one, the tonsillar type which has a charm of its very own. In tonsillar plague the seat of the infection, as its name suggests, is the pharyngeal tonsils. This unique infection is achieved only when captured, infected fleas are transported from hand to mouth and chewed to death by those nihilists who eschew the more traditional methods of crushing, burning, dusting and spraying.

Plague has an antique and awesome history. Forty-one epidemics were recorded in the 1500 years before the Christian era. The Old Testament cites the "mice" that overran the land and studies of this venerable document indicate that both bubonic and pneumonic plague were well-known to the Israelites and their enemies.[2] In fact a primitive form of bacteriological warfare using the plague organism was waged by the Israelites against the Philistines at Beth-Shemesh (1320 B.C.). At various times in the following centuries plague decimated the empires of Greece and Rome.

In the ensuing 1500 years over 100 epidemics were recorded. The first of these began in Egypt in 542 A.D., fanning along the trade routes eastward into Asia and westward throughout Europe to distant Ireland. The second great pandemic cast the plague in the dreaded garb by which we have since recognized it, "The Black Death." This epidemic spanned six hundred years, starting in the 11th century, reaching its height in the 14th and dying out in the 17th, when the disease virtually disappeared from western Europe. It also followed the trade routes and many believe that it received impetus by the Crusaders returning from the Holy Land in the 12th and 13th centuries. All told over 25,000,000 people perished, approximately one-fourth of the world's population at that period.

The relative quiescence of plague during the latter part of the 17th, 18th and the early part of the 19th centuries was only a respite before new and even more deadly assaults against mankind which started with the third great pandemic. Starting in China in 1855 plague spread both eastward and westward over a period that extended into the present and girdled the globe. Its victims, still to be recorded, are estimated in the tens of millions. In India, alone, in the period between 1896 and 1917, nearly ten million deaths from plague were recorded. According to Gordon and Knies[3] serious plague reservoirs in modern times are to be found throughout Asia—in Burma, in North and South China, Manchuria and Inner Mongolia—in Mediterranean Africa, Atlantic West Africa as well as in our own hemisphere.

Plague, except in its pneumonic form, is accidental in man, but part of the destiny of rats. Its world-wide distribution, ancient history and ineradicability rest on the catholicity of its contacts and conveyors. For aside from the rat, it is found in its sylvatic form in a variety of rodent-like animals such as *bandicoots, gerbiles, jerboas, spermophiles, susliks* and *tarbagans,* in addition to the more pedestrian California ground squirrels and prairie dogs.

Plague is primarily a disease of rodents. Ranging the highways of rat runs, *P. Pestis* taxis from rodent to rodent in the flea.

Healthy rats, though they live in close proximity with man, ordinarily shun him as much as they do the daylight. It is therefore a disquieting harbinger to see more than an occasional scavenging rat outside of his harborage seemingly unafraid of man. The late Albert Camus, brilliant Nobel Prize-winning

French writer, has described the meaning and the impact of a panicking rat population, sickening, suppurating and dying underfoot, in the following excerpts from his amazing novel, *The Plague*, which is also formidable epidemiology: "There were more and more dead vermin in the streets, and the collectors had bigger truckloads every morning. On the fourth day the rats began to come out and die in batches. From basements, cellars and sewers they emerged in long wavering files into the light of the day, swayed helplessly, then did a sort of pirouette and fell dead at the feet of the horrified on-lookers. At night, in passages and alleys, their shrill little death-cries could be clearly heard. In the mornings the bodies were found lining the gutters, each with a gout of blood, like a red flower, on its tapering muzzle; some were bloated and already beginning to rot, others rigid, with their whiskers still erect. Even in the busy heart of the town you found them piled in little heaps on landings and in backyards. After the daily clean-up of the town, which took place at sunrise, there was a brief respite; then gradually the rats began to appear again in numbers that went on increasing throughout the day. People out at night would often feel underfoot the squelchy roundness of a still warm body. It was as if the earth on which our houses stood were being purged of its secreted humors; thrusting up to the surface the abscesses and pus-clots that had been forming in its entrails. You must picture the consternation of our little town, hitherto so tranquil, and now, out of the blue, shaken to its core, like a quite healthy man who all of a sudden feels his temperature shoot up and the blood seething like wildfire in his veins."[4]

Plague in rats differs markedly under various conditions. Maxcy[5] points out that in small communities, for example, plague may spread so rapidly that it can destroy the entire rat population and thereby burn itself out. In larger cities with dense and overcrowded populations, there is often an ebb and flow of the epidemic which tends to last over long periods of time.

Plague in the rat presents the age-old conundrum of which came first. Actually no one knows whether the disease originated in the so-called domestic rat and spread to his country cousins or whether is was the other way round. But wild or domestic, the *Pasteurella pestis* is completely at home in the rat and its ectoparasite the flea. Actually over 30 species of fleas are potential plague vectors. Over a dozen on the North American continent parasitize a variety of mammals.

There is a strange and consistent irony in the behavior of fleas and rats. For the flea will leave, in fact must leave, the dying rat as surely as the rat abandons the sinking ship. And for the same reason—survival. This pattern is part and parcel of the natural history of plague but it was not until World War II that its full implications were understood and exploited in the control of the disease.

The traditional approach to plague prevention and control was the suppression and elimination of the quadruped vector. During the Dakar epidemic (1944) of World War II American military authorities initiated a new method of control with the primary attack on the flea. The new rationale was based on the simple logic that the wholesale extermination of rats only tended to disseminate plague through the dispersal of starving fleas whereas the elimination of fleas would *post hoc* break the chain of transmission. Whether it was coincidence or cause-and-effect the reduction of the flea population "to almost unbelievably low limits" and at the same time a dramatic drop in human cases was observed.[6] Of itself this would justify a new look at the flea as a key member of the plague triad. But it has a fascination of its own.

According to those in on-the-know, the adult flea cannot be mistaken for any other creature. From its head, yes, to its genitalia, it is unique among the hexapods. Those of an orderly turn of mind will be happy to know that fleas as a group constitute the order *Siphonaptera*, which is another way of saying wingless, sucking insects.

The flea's claim to fame rests not on the fact that it is a damned nuisance to both man and rats, both of whom it parasitizes, nor that it is unique in its entry into the world—a matter we shall note shortly with circumspection—but that it serves as a host and transmitting agent of the organism responsible for the plague. In this role the flea has attained a notoriety and immortality not granted to many other of God's little creatures.

The flea and the louse have much in common besides their nuisance value. Take sex, for example. Like that of the louse, the sex life of the adult flea has nothing to commend it. This in spite of the fact that it is replete with copulation and egg laying. The flea embryo, on the other hand, commands our attention and admiration. Any other creature might be daunted by the armor-hardened egg case imprisoning it. But not the flea embryo. True to its heritage of uniqueness—or possibly to justify it—the embryo grows a sharp rhinocerous-like spine on its head which it uses as a whirling, whurring can-opener. By tumbling around rapidly the cephalic spine shreds the egg case, permitting the new-born flea to emerge and take its rightful place in the line-up of man's tormentors. Its emergence may not be as ebullient as the louse's but it does challenge it for originality.

Like the louse the flea is flattened, but unlike it, from side to side instead of from top to bottom. The same general effect can be achieved by pulling the wings from a grasshopper, lay it on its side and run a steam roller over it. The third pair of the flea's legs account for the flea's name. With them the flea is able to leap in a most extraordinary manner, and in proportion to his size, extraordinary distances. It is well-known that the rabbit having larger hind legs than fore legs is able to run faster uphill than down. As far as I know, no research has been undertaken to determine whether this is also true of the flea.

The adult flea's oral architecture is ideally suited to the task for which it is designed, consisting of a long slender epipharyngeal stylet as well as a pair of maxillary stylets. With this equipment and other working jaw parts, the flea appears to bite; actually, it opens the skin by protracting and retracting the maxillary laciniae. Should the mammal on which the flea is living be infected blood containing pathogens is drawn into the pharynx. In the normal course of events the blood would travel from pharynx to proventriculus or stomach number one, to stomach number two, thence outward via the usual route. If the bacterial fertility dance becomes too energetic, what happens, is that the bacilli go about their work of perpetuating their race at an enormous pace until they virtually block the flea's proventriculus. In dire frustration the flea continues to seek food and "bite" viciously, but the blood it draws is all in vain. It enters the dammed-up stomach only to be spit out again carrying with it some of the deadly bacteria. Thus the plague-ridden flea, like the plague-ridden rat and man, begins to sicken. If it outlives the rat, it harbors within its gut the seeds of man's destruction.

The flea's stomach—for those of such interests—has a capacity of approximately 5 cubic millimeters, which is miniscule compared to man's 2 to 3 million cubic millimetered organ, yet sufficient to receive and house 5,000 *Pasteurella pestis* while imbibing blood during an ordinary meal on a rat or a man. The behavior of these bacteria varies according to the flea's general state of health, season of the year and the existence of epidemic conditions. In epidemic seasons the percentage of bacteria is greatest for the first four days but the stomachs of some fleas have been found to be filled with the organisms on the twentieth day. In the non-epidemic season plague bacilli are not generally found in the stomach after the seventh day. In epidemic seasons fleas may remain infective up to fifteen days, while in nonepidemic seasons only seven days. As a consequence the percentage of infections in animals is much less than during epidemics.

Chandler points out that fleas do not remain infected indefinitely. The length and

virulence of the infection appears to be in inverse ratio to temperature. Many die "especially in hot, dry whether since they are unable to overcome the effects of desiccation by imbibing fresh blood. Since the infected fleas live such a short time in warm climates, epizootics subside quickly, and with them the human epidemics. The 'bites' of fleas that do not become blocked are never infective, although the feces are. The feces may remain infective in dark, damp places for over a year and cause infections in rodent burrows long after the fleas have gone. This also might account for the continued occurrence of human cases after a rat epizootic has died out, for human or dog fleas might infect bites with their feces even if not blocked."[7]

Thus it appears that the flea transmits plague organisms by both proximal and distal ends. It is sad to note this versatility for in a sense it indicts the flea doubly. Yet the flea unlike the louse is not rigidly bound to a life of parasitism from the very beginning. In its youth when it is capable of learning but apparently unwilling to profit from its independence, the young flea can and does live freely away from its adult host. But inevitably it becomes haemaddictive. And maybe in the larger design of things this is the way it should be.

LOOKING AT IT FROM THE LOUSE'S POINT OF VIEW

THE LOUSE has an unsavory reputation which goes far beyond its lousiness. The very words *louse* and *lousy* as applied to humans mean more than a comparison with an irritating insect or a state of infestation. Yet sadly enough the louse (insect-type) did not bring this on itself. This is not to say that the indictment against the louse is unwarranted. Indeed it is; for it is identified with some of the deadliest diseases known to man—epidemic typhus, murine typhus, epidemic relapsing fever, Tabardillo, and Brill's Disease. Perhaps it is fortuitous, but then it may be cosmic justice, that in payment for its part in these plots against men the louse shares their misfortune in falling prey to the very organisms for which it serves as breeding ground, reservoir, and transmitter.

While the role that the louse plays may be clear these diseases are not. Louse-borne or so-called epidemic typhus for those with a microbiological bent owes its existence to the *Rickettsia prowazeki* (and for those with a specific taxonomic interest) *da Roche-Lima*. Actually, louse-borne typhus along with flea-borne, murine or so-called endemic typhus is both endemic and epidemic. Moreover, it is now believed that murine typhus is capable of becoming louse-borne typhus. Now that this point has been clarified it may be said that this disease (in other words epidemic typhus and its endemic anlage) since time immemorial, has blessed man wherever he has congregated in close quarters. It has flourished primarily in periods of hardship, wherever man huddled for warmth, protection, in flight or in war.

As such times, when lice feed on infected men drawing death in their innards, danger of their lousiness lies not in the transfer of the *rickettsia* via the hypodermic route which is the method employed by the malarial mosquito. Rather it is in the itchiness they cause. Lousy men tend to scratch and abrase their skins impressing the infected feces into the "wound" and thus into the blood stream. Failing to infect himself in this manner he may resort to rubbing his eyes with contaminated fingers, employing the highly efficacious conjunctival route.

In addition to its crisis characteristics, typhus has a seasonal fluctuation, with its greatest incidence in winter and early spring —when men by their close proximity tend to be lousiest. Despite the advances in antibiotic therapy the mortality rate from this disease ranges from 15 to 75 percent. And by any token, that's quite a range.

Now flea-borne typhus is a sylvatic disease in the sense that it is found free in nature, in rats; actually, of course, in the rat-

flea. It is transmitted by the rat-flea to man —in this case whenever rat populations and human populations burgeon and co-mingle. Like louse typhus, murine typhus is widely distributed throughout the world, particularly in the warmer climates. Thus, murine typhus and sylvatic plague are truly country cousins.

The casual organism of murine typhus is a different *Rickettsia—mooseri* Montiers—again for the benefit of the taxonomically-minded. Unlike louse typhus, murine typhus is a milder disease with a very low mortality. So if you must pick and choose, you now have a real basis for doing so.

A cosmopolitan epidemic disease with widespread distribution, today epidemic relapsing fever is no longer the threat it once was. Through World War I, however, this was a dreaded, deadly disease that periodically swept across Europe.

Man is the reservoir of this louse-borne infection. The transmission chain is man-to-louse-to-man. There must always be a human carrier in a lousy population. In tick-borne or endemic relapsing fever, the reservoir is charmingly sylvatic.

Once there were many theories concerning the method of transmitting the infectious organism of this disease which incidentally is called *Borrelia recurrentis* (Lebert). Once some believed that the spirochete was transmitted from louse to man in one of the ways flies pass on infectious material—by regurgitation. Others thought the fecal route was the way. Actually man is his own worst enemy in this case. He not only harbors the disease to begin with but assures the infection of his fellows. When lousy he scratches and excoriates himself, crushing infected lice and introducing into the blood stream the spirochetes which he has collected and should have kept under his finger nails.

One could go on with disease after disease making quite a case *against* the louse but in virtually every instance we would discover that man is not only his own worst enemy but there is something to be said *for* the louse. And the Lord knows many of us could, in fact many of us should, look at life from the louse's point of view.

If an ordinary, garden-variety, everyday type of louse you and I see almost everywhere were able to dream, the nightmare of its life would be the fear that one day it might live with, and on, an infected man. Living *with* means feeding *on*. Thus the ill-fated louse virtually and almost always seals its doom when it sticks its stylet into a typhus-infected human, solely seeking food and drink, but involuntarily imbibing the deadly *rickettsia*. In a few days that louse, innocent of all malice, begins to sicken. The *rickettsiae* multiply enormously in its midgut and by the tenth day the infection is so massive that the louse begins to hemorrhage internally, passing in its bloody feces thousands upon thousands of organisms. Man may recover, and when he does so, he does so completely, but by the twentieth day of the louse's infection it usually gives up its little ghost. Should it survive, it is marked for life, remaining infectious to its dying day.

Yes, it is we, not the lice, who are the *bêtes noirs* in this story. They lead relatively harmless lives. The worst that can be said is that they are nuisances. Then on a day—like the proverbial bolt out of the blue—an epidemic occurs. The only world they have ever known becomes pestilential and deadly. As a consequence of circumstances beyond their control *they* become deadly before they die. Out of an uncontrollable need for nourishment, and with death in their entrails, they pass on the infection. Thus, there's almost a poetic justice in the fact the sins we visit on the lice return to plague us.

In the strictest sense of the word the louse was not always lousy. Once it was not the dependent parasitic creature it is today. Once it was a free and liberty-loving bug that could look any other bug in its multifaceted eye without so much as a squint at the mention of the word, "louse." It exercised its independence by grubbing for food wherever free and independent lice ordinarily grubbed for food. It ran the risks and hazards of a

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highly competitive life—desiccation due to overexposure, drowning by flood, cannibalism by birds, frogs and lizards.

Probably by the sheerest of accidents on what might have otherwise been a discouraging day one louse not only simplified life for itself but started a new race. It attached itself to a warm-blooded mammal and sat tight. It discovered that it did not need wings; it got around by hanging onto its moving colossus. So it got rid of them. This, of course, didn't happen over night, but it did happen, as any louse can tell you. Wings gone it discovered what every doughfoot quickly learns—to flatten himself to survive. When the louse's back approximated its belly it became virtually indestructible by such conventional means as squeezing, pressing, hitting or stepping on. It also helped the louse serve as a model for the modern automobile. This, too, took time. During this retooling operation it discovered it needed at least one good set of biting jaws or a sucking apparatus. It developed them. This also took some time. In making these changes the louse lost its freedom and independence. It traded them for a reasonably secure source of food, warmth and shelter, a security which inherently retained in itself the seeds of the louse's ultimate destruction.

Thus far we have been talking about the louse as if it were a custom-made job. Actually there are lice and there are lice; but we are concerned here with that group called sucking lice, biologically speaking the *Anoplura*. This group is distinguished, of course, from its country cousins, the biting lice, or *Mallophaga*. The *Anoplura* are the most constant companions of both man and monkeys; the *Mallophaga*, on the other hand, parasitize birds and mammals. They live on the hairs, feathers, and in the debris and discarded cells of the skin. They are often called biting lice; but actually this is a very misleading name because they do not bite with their mouth parts, they puncture the skin and draw blood in hypodermic-like fashion. More properly they should be called chewing lice. Since many of these lice are parasitic on birds, they are often called bird-lice. But this too is misleading, because some of them are also parasitic on mammals. Now that we have clarified this issue we can turn our attention to the specialized suckling lice of men.

One particular species has adapted itself to life on man's head, neck and ears. This ridiculous *pediculus* is called *humanus capitis* and is probably the granddaddy of all other lice that inhabit us. It probably jumped from monkey or other fur-bearing animals to man. In the early days that long jump was only one of many, back and forth. When it settled down to serious living with man it did its best to adapt fully. Thus in Africa it became black, in India smoky, in China yellowish-brown, in the North American Indian dark brown and in the white European, significantly, a tell-tale gray.

The *pediculus* called *humanus corporis*, the body or clothing louse, the "cootie" of World War I fame, "mechanized dandruff" or "the seam squirrel" of World War II, is probably derived from the head louse. It was unknown to clothing-less primitive man. But when civilization in the form of pants caught up with him the louse began to attach its egg cocoons or nits to the fibers of his clothing instead of to the hairs of his body, thereby gaining a degree of protection from direct attack. Actually, contact with the body is maintained rarely on any occasions other than at feeding time. Just as hair is the harbor for the head louse, clothing becomes the haven, the anchorage and the nest-substitute for the body louse.

There is still another louse, a somewhat retiring one, which one must mention *en passant*. It inhabits the protected hollows of the body—the pubic area and the arm pits. For some obscure reason this species is called *Phthirus pubis*. The more venturesome of this species occasionally gets around the mustache, the beard, eyelashes and eyebrows. These minor excursions when noted on a visitor tend to enliven the conversation of otherwise dull evenings.

The sex life of the louse is nothing to speak of. Soon after conception, the mother

louse begins her egg-laying at the rate of five or more a day, keeping it up continuously for about thirty days. The eggs are attached to the fibers of the clothing by a cement-like substance which forms the nit. At normal body temperature hatching occurs in a week.

Where its mother and father may have failed it, the young louse in its very birth distinguishes itself. Had primitive man observed the nymph's extraordinary skill and enterprise, he would have glimpsed into the jet age. Almost tentatively, the young louse in being born forces open the lid of its egg case, which, as you might expect, is too small. Thwarted? Not a bit. Like a jet engine it begins to swallow air from in front and eject it from behind, gradually increasing the pressure until eventually it pops out into the great world. It is then a finished little louse, a perfect image of its parents. If properly fed and taken care of in two to three weeks it can assume its role as a fully mature, first class louse which from a medical point of view means as a vector.

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HEAT INJURIES ARE PREVENTABLE

Summer heat can cause bodily injury unless precautions are taken. All persons are susceptible, and once a victim of heat injury the person becomes more susceptible to the heat.

As we are all aware there is the heat stroke and the heat exhaustion types of injury, each type requiring its particular treatment. Deaths can occur from either type.

Heat injury is preventable through acclimatization, adequate water intake, loose fitting clothing to allow the body heat to dissipate, avoidance of over-exertion, and a reasonableness in exposure to the direct rays of the sun.

In the military services a great responsibility lies on Commanding Officers in planning training programs and the execution of them. Medical personnel should be consulted frequently for advice to prevent heat exposure among troops.

EDITORIALS

Mass Casualty Philosophy

YOU probably are saying to yourself, "I listened to all I want to hear about mass casualties!" If this is your feeling and if your community has a well-integrated, repeatedly tested disaster plan, you will not need to read further.

However, if you are like most people and if you are from an average community, you should be interested in the comprehensive and readable book *Surgical Philosophy in Mass Casualty Management** by Doctors Bowers and Hughes.

This frank and hard-hitting book stresses that planning for mass casualty care does not necessarily envisage thermonuclear attack with its estimated thousands, hundreds of thousands, yes, millions of casualties. These doctors do not deny such eventualities but while keeping this in mind they plead for common sense plans for the care of casualties occurring all too frequently in floods, tornadoes, explosions, auto and plane accidents, train wrecks or whatever other disasters may occur in our daily lives. They urge that it is not enough simply to write up a plan but emphasize that the individual hospital plans must be correlated to form an integrated area plan and then this plan must be tested again and again. Mistakes and weak points must be corrected and then the revised plan must be tested again. This repetition must continue until everyone knows his job assignment and can carry out his mission successfully. The authors review civil disasters which have been documented, pointing out the disappointing physical and emotional situations which have developed because of lack of a tested plan. Absence of a pretested plan can lead to chaos such as seen all too frequently in a disaster situation. This book covers every aspect of planning for and treatment of mass casualties; administrative and professional, physical and emotional. This down-to-earth common-sense book is one to be studied thoroughly and the management of mass casualties will be better for such study.

**Surgical Philosophy in Mass Casualty Management.* By Warner F. Bowers, A.B., B.Sc., M.D., M.Sc., Ph.D.; and Carl W. Hughes, A.B., M.D. Published by Charles C Thomas, Springfield, Illinois. Price $6.75.

Environmental Health Units

MANY new hazards are being injected into our environment as a result of discoveries of new products and new methods of doing things. We can hardly avoid these hazards since we need the new products and the new methods. That is progress.

Whether we like it or not we have been subjected to radioactive materials from nuclear explosions. These materials have fallen out on our land and will continue to do so. Then there are the industrial wastes that are being thrown into the air and into our streams which someplace along their courses may be used for the community water supply.

Concentration of people in the cities, an increasing problem as each year passes, the overall increase in population, and an entirely different way of living from that at the turn of the century, have made a complicated life for most of us.

It would be a paradoxical situation if the extension of life expectancy in the past fifty years should have a reversed trend due to the hazards which are thrust upon us in our new way of living.

Preventive medicine which in the past has accomplished so much in increasing life expectancy through the control of communicable disease is turning now to the broader

field of our total environment.

The public has a right to look to the Federal government to assist, and many times to take the initiative, in the control of these new hazards. The Public Health Service has a task force working on an organizational plan for environmental health units which will assist States and communities in their problems.

Because of the complexity of these new hazards it is no longer possible for one person to be an expert in all the fields that are involved. There must be available a number of experts that can be called in to cover every facet of a problem when a community asks for assistance in these complicated matters. These experts must be thinking ahead also of what might develop in the way of hazards. Access must be had to well equipped laboratories, not in every community, of course, but at strategic points. Modern transportation and rapid communication, and the dissemination of information to the public are very necessary adjuncts to the solution of the many problems.

It will be interesting to watch the developments in these new environmental health units when organized.

On Being Happy

THERE are two ways of being happy: We may either diminish our wants or augment our means—either will do—the result is the same; and it is for each man to decide for himself and do that which happens to be the easiest. If you are idle or sick or poor, however hard it may be to diminish your wants, it will be harder to augment your means.

If you are active and prosperous or young and in good health, it may be easier for you to augment your means than to diminish your wants. But if you are wise, you will do both at the same time, young or old, rich or poor, sick or well; and if you are very wise you will do both in such a way as to augment the general happiness of society.

BENJAMIN FRANKLIN

Federal Nursing Service Award

THE nurses in the Federal Services are to come in for further recognition by the establishment recently of the *Federal Nursing Service Award* sponsored by Hoffmann-La Roche Inc.

The first award will be presented at the 67th Annual Meeting of the Association of Military Surgeons of the United States which is to be held in Washington, D.C., October 31, November 1 and 2 of this year. The Honors Night Dinner on November 2 will be the occasion for the presentation.

For some months Captain Ruth A. Houghton, MC, USN, Director of the United States Navy Nurse Corps, current Chairman of the Nurse Corps Section, and member of the Executive Council of the Association of Military Surgeons, has been working with a committee to formulate and present plans for the award to that Council. Numerous details had to be worked out before the announcement could be made.

The recipient who must be a member of the Federal Nursing Services at the time of selection for the award, will be presented with an appropriate scroll and an honorarium of $300. All members of the Federal Nursing Services holding civilian or military appointments are eligible to compete for the award irrespective of membership in the Association of Military Surgeons.

The awardee must have submitted a paper which reports the most beneficial study of, or contribution to, professional nursing in any area of practice. The subject material presented in the paper may be the result of the study, or actual experience, or a combination of both. Credit will be given to the amount and quality of the original work but the primary consideration in selection of the awardee will be the contribution made to professional nursing by the individual.

Each contestant for the award is requested to furnish six copies of her paper not signed with the true name of the author, but identi-

fied by a nom de plume or distinctive device. All papers must be received by the Secretary of the Association of Military Surgeons, 1726 Eye Street, N.W., Washington 6, D.C., not later than August 1, 1960, accompanied by a sealed envelope in which the true name appears with address; the outside of the envelope to bear the distinctive mark or fictitious name which appears on the manuscript. The length of the paper is fixed between a maximum of 10,000 words and a minimum of 3000 words.

When the awardee is selected notification will be made, which is expected no later than October 1, 1960.

While the *Federal Nursing Service Award* is offered only to a member of the nursing profession employed in the Federal Government agencies, nurses are eligible to compete with all medical and allied medical service personnel for several other awards offered through the Association. A list of these appeared in the editorial column of MILITARY MEDICINE in March of this year.

SO . . . YOU'RE GOING TO THE HOSPITAL

U. S. Air Force Photo

MAJ. GEN. O. K. NIESS (L) AND
COL. R. E. BITNER

This recently published book by Captain Leonard Berlow and Major Vincent Bagli of the Air Force Medical Service is now in distribution. Here shown is the first copy of the book being presented to the Surgeon General of the Air Force, Major General O. K. Niess, by Colonel R. E. Bitner, Secretary of the Association of Military Surgeons. Copies of the book may be obtained through the Association.

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Around the World

(Ser. III, No. 20)

By

Claudius F. Mayer, M.D.

TIBET and the affairs of the Tibetan people were brought to the limelight by recent history, in accounts of newspaper men and by the invasion of Red China into the land of the Dalai Lama. Few Western people have had the opportunity to spend many years at the top of the world to study the Tibetan people and their culture. However, one of these Westerners was Theodor BURANG who has been studying Tibetan language and literature for several decades. He was especially intrigued by *the medicine of Tibet.* In his recently published work (Tibetische Heilkunde, Zürich, 1957) he shows that Tibetan medicine is highly respected in many parts of the Asian interior because of the apparently successful approach to the healing of various diseases. This is particularly astounding since we know that, not so long ago, in certain districts of Eastern Tibet, specifically in Kham Province, almost 90% of the population suffered from manifest syphilis and from severe skin diseases.

The Tibetan has a peculiar idea about the origin of disease in general. Essentially, this idea is not far from the *psychosomatic thought of modern Western medicine.* In Buddhistic Tibet, many diseases are ascribed to the eternal law of retaliation: someone has committed a sin in his previous life, and he has to suffer for it in the present cycle of his rotating existence. Aside from such manifestations of Fate, a disease may also start from someone's unhealthy thoughts. (Didn't Osler say that the fate of a tuberculotic depends not so much on what he has in his chest but upon what he has in his soul?) Sickness is provoked, then, so that these partly supernatural, partly demonic, and partly internal causes interfere with the harmony of the "three fluids" or "essences" which are the bile, the air, and the mucus.

On the basis of this *Asian "humoral pathology"* many diseases are looked upon as "surges" of one or the other "essence." Many are the diseases caused by "air"; they may be systemic, or local. Often, the general surge of an "essence" may cause a local disturbance of another essence; this makes the therapeutic approach more difficult for the Tibetan lamaistic physician. Add to this that the "essences" have certain daily, monthly and seasonal periodicity in their functional power which all have to be considered in the management of the disease! No wonder that the maturing of a Tibetan physician requires 20 years or more. Even then, he will hardly come near the ideal healer, the one who would be able to establish a diagnosis without the examination of the sick!

In diagnosis of a disease, the inspection of urine, the touching of the pulse, and the interpretation of dreams play an important role. The chief purpose of the examination is to determine into which of the categories a sickness belongs. Here, the Tibetan medicine is under the strong influence of the old Chinese doctrine. The *Tibetan physician* begins his examination with 29 questions which concern the type and the site of the patient's pains, his diet, living conditions, sexual life, etc. Then, he will look at the tongue of the sick, at his urine, and he will touch the pulse in the prescribed manner at the traditional "pulse zones." Some of the doctors will then inquire about the patient's dreams, and will look at his pupils.

According to the Tibetan ideology, the human body consists of a material part, and a "fine duplicate" of the material form which is closely connected with the material body at several points. (This is a sort of "psyche" in the body's shape.) This must be also considered in the management of the patient. Thus, the *Tibetan medical student* must learn

a lot. The Tibetan "universities" have four faculties, one of them medical, but the student has to learn much more than straight medicine.

The textbooks are in manuscripts, often just loose leaves, which may be purposely mixed up to hide the valuable contents of the book. Moreover much in the copied works is kept symbolic, and mostly the solutions of the problems are not recorded, thus to *make the art of medicine impenetrable* to the layman. Many times very simple objects are labelled with strange and long names. Thus, for instance, a Tibetan pharmacological work has the term "du-ci-men-dyi-nam-ye-ngo-wo-nu-ming-dye-par-she-pa-dri-me-shel-gong" which simply means "sodium bicarbonate." Many ancient Indian (Sanskrit) and old Chinese medical works have been translated into Tibetan. We should remember that during the period of the Tang Dynasty, China was THE medical center of contemporary Asia, and it had also a first-class medical school. But the Tibetan has a different attitude towards his *medical textbooks* than the Western doctor. He considers them only props to which he has to give life. It is the doctor who gives the meaning to the book and not vice versa. "Hundred times hearing does not weigh as much as once seeing" (Pai-we-pu-dzhu-yi-chien). Hence, the medical works of the Tibetans are hard to translate.

The medical student must prepare himself throughout thirteen years before he is admitted to the examination which he must pass before the start of his medical studies proper. The instruction is theoretical and practical. Many examinations are made at the bedside of the patient. The *prestige of the medical profession* is very high, so high that he does not even need a formal diploma. His title is "men-ram-pa." He makes a record of his daily observations in a diary, which is then exchanged with the diaries of others. This is one way of keeping up with medical science. The physician never asks for a set fee, yet the patient compensates him for his work, the more so since, according to the general belief, an unpaid medical service will not bring luck. But, the two-pennies of the poor are just as much valued in this respect as the rich gifts of the wealthy.

The *medical armamentarium of the Tibetans* is chiefly from the vegetable kingdom, less from the animal, and still less from the mineral sphere. The administration of these medicaments, or their processing is similar to the methods of western medicine. Many prescriptions are for the treatment of the WHOLE man; few are for local effects. Dietetics is well developed. The Tibetan physician also knows of the purge. He uses medical baths, ointments and salves, he applies heat therapy, and *performs minor surgery* (removal of foreign bodies, cautery of ulcers, removal of indolently healing wounds, etc.). He practices various forms of massage, and occasionally also the acupuncture and the moxibustion. He has objection to any kind of blood transfusion. (For the same basic reason, injection of the medicaments is also objectionable.)

Bleeding is performed by *cupping. They know 77 sites* where to take blood. Dentistry is practically non-existent. (Even in China, the number of dentists used to be very low.) Dermatology is well developed in Tibet. Cancer is considered a terrible disease, but no operative treatment is practiced. Local treatment is added whenever the cancer is on the surface. Cancer is considerably rare in Tibet, and still less frequent among the monks in the monasteries of Buddha.

Among the *mental diseases,* which the Tibetans ascribe chiefly to obsessions by demons, epilepsy is mentioned as incurable. Multiple sclerosis seems to be unknown in Tibet. There are no asylums for mental diseases, and the insane persons are left with their families. (This seems to be also our most modern trend!)

Cataract is apparently frequent. Among 5,203 patients of a Chinese ophthalmologist, 351 (or 6.75%) had cataract. Most of the patients were Tibetans. In another group of patients with eye diseases, the *incidence of cataract* was 68, 45%, most of them were again Tibetans. It seems that senile cataract, which made up four fifths of this eye doc-

tor's series, appears in the Tibetan patients to 10 years earlier than in Chinese patients.

How long the Tibetan medicine and the Tibetan practitioner can hold on against the occupation and *invasion by the Chinese* is questionable. Here is an example of the reason why Tibetan medicine in the old form must go. A young Chinese doctor, by the name of Li Kung, emigrated to the Machu County where the *Tibetan Oula people* have a village in southern Kansu province. The area is 3-4,000 meters above sea level, and snow begins to fall in September. This young doctor, a graduate of the Lanchow Medical School, with four other Chinese doctors and nurses came in 1955 to set up a clinic in the county, and to organize mobile medical teams to give free treatment. There was great opposition to their work, partly because they were communists, partly because the local shepherds wished to be cured in the old way. Yet, since 1955, the first clinic has become the County General Hospital, and there are 14 other clinics now in this county alone, with a staff of 120 medical personnel trained in China in western type of medicine.

Physicians enjoy a high prestige not only in Tibet but also in some Western countries of Europe. This became known recently by a survey of public opinion conducted in France. Someone wished to know what the *Frenchman's idea is of his own doctors.* They stand very high in the eyes of the public, for many reasons. According to the replies of the survey, medicine is an indispensable profession; it requires much study, and it brings some material reward. For his economic welfare, the physician stands higher in the public mind than, for instance, a bank director (no wonder, with the devaluation of the French franc in recent years). For the difficulties of his studies, the physician is also put at a higher level of esteem than is the engineer. For the high moral requirements of his profession, the physician comes before a priest. The French people in general want their practitioners to have professional conscience, next to this to be good diagnosticians, and thirdly to have a good quality of medical technic. The ideal French doctor is between 35 and 54 years of age. Most of the French people wish to select their own doctors. Generally, they are satisfied with the work, the bedside manners and the therapeutic success of their physicians, and they do not wince at paying a well-deserved fee to them.

In December 1956, the International *Committee on Laboratory Animals* was formed. This Committee is now supported by a number of international organizations, including the Council for International Organizations of Medical Sciences, and the UNESCO. The activity of the Committee started with a survey on the *production and utilization of laboratory animals* in a number of countries. Further attempt was made to clarify the situation in this field; an international symposium was held in October 1956 at Paris. (Still no report has been published.) The main questions of this symposium were: (1) detailed requirements in the main biological disciplines using animals (i.e., cancer research, radiobiology, microbiology, physiology, cell and tissues culture, endocrinology, pharmacology, and pharmaceutical industry); (2) to what extent the needs were met in the different countries, and (3) future possibilities in regard to animal genetics. The Committee began to publish a Bulletin in September 1957, semiannually. Various centers have been formed in the United Kingdom, U.S., France, also in Australia, Belgium, the German Federated Republics, Holland, India, Italy, Japan, etc. Now, a list of definitions is in preparation to describe *laboratory animals of high qualities.* A trend developed also for the proper training and *qualification of animal technicians.* Facilities for such a training have been created in the U.S., France, and Czechoslovakia. An international cooperation in this field is still missing.

According to the figures of the Board of Trade in Great Britain, *exports of British drugs* and medicines reached a record height in 1959. The total export of drugs was over 40 million pounds. Of this, almost 4 million pounds went to Australia, 2½ million pounds to Nigeria, almost two million pounds to

Ireland and to New Zealand (each), over a million pounds to both Canada and the U.S.A. India, Pakistan, and South Africa imported slightly less British drugs. Antibiotics (ca. 8 million pounds) and vitamins (almost 3 million pounds) were the largest groups in the drug export.

The *lesser drug export to India* is partly due to the efforts of the Indian Ministry of Industry to develop a national pharmaceutical wholesale production. In this effort, the Hindus are working under the guidance of Soviet experts. The Soviet government offered 80 million rubles to cover the foreign exchange requirements of the five plants they recommended. The plants would manufacture various Indian drugs, including antibiotics. The *Hindustani Antibiotics Plant* at Pimpri was already producing 40 million mega units of penicillin; others were producing 30 million mega units. The total demand for penicillin in India is 60 million mega units.

In backward or underdeveloped countries, as for instance in the *Territory of Papua* and New Guinea, it is an unsolved problem *how to treat endemic goiter effectively.* Iodized salt cannot be used to good advantage. Other forms of self-medication are also little suited for use by so primitive a people. Some members of the University of Melbourne Medical School are now experimenting with the idea of creating a lasting depot of iodine by *intramuscular injection of iodized oil.* The experiments and studies showed that the injection of 1.5 ml of iodized oil will take about two full years for absorption from an intramuscular depot. There seems to be no adverse side effects from carrying one's "medicine bottle" in this intramuscular form in the buttocks.

We may sometimes wonder how effective the modern screening methods are in detecting *cancer of the cervix uteri.* In a series of examinations of cervical smears of women over the age of 30, pathologists of the National Women's Hospital of *Auckland, New Zealand,* found cancer in 67 among 19,785 women who had no clinical evidence of carcinoma. Of these, 20 were early invasive cases (Stage 1) which would have passed unrecognized by clinical methods. These so-called "surprise positive" cases make the wholesale screening worthwhile and justifiable. In New Zealand, the laboratory costs of detecting a surprise positive is approximately £100, and of saving a life £170, if we must reduce this to money value.

Alcoholism is a general affliction all over the world. *In Chile,* a questionnaire proved that there are 150,000 alcoholics in that country, or about 4% of the total population. This ratio is just about the same as in the United States, and somewhat lower than the ratio for France. Counting only the male alcoholics, 8% of Chile's men folk are overindulgent, while, among the French, 15% of the men are drinking too much. The ratio of alcoholic men to drinking women is 16 to 1 in Chile, 6 to 1 in the United States, and 20 to 1 in the Scandinavian countries. The major alcoholic drink of Chile is wine.

The first *Symposium of Auxological Medicine* was held early this year at the Gregory Mendel Institute of Human Genetics in Roma. "Auxology" is a new constellation of several branches of medicine which have something to contribute to our knowledge of human growth under normal and pathological conditions. Chiefly, obstetrics, genetics, pediatrics, endocrinology, psychology and psychiatry are concerned. Italy is fortunate to have a special auxological center in the town of Piancavallo (Novara) which has been active for some time through the financial support of the *"Charitas Ambrosiana."* The chairman of the medico-scientific commission of this center, Prof. Luigi Gedda, pointed out that during the growth period a person is best studied within the frame of his own family rather than as an inmate of an institution.

In Italy, an *Institute of Book Pathology* was founded in 1938 in Roma by the efforts of Alfonso Gallo. It studies the problems of the natural alterations of materials used for books (papyrus, parchment, paper, leather, skin, etc.), and the liquids used in their production. It also does research on the methods to control the biological and physical agents which cause damage to a book. Here is an institute which makes a scientific study of

the work of termites, etc. It was found that many Italian libraries are gradually consumed by *termites, especially in Sicily,* Sardinia, Lazio, Campania, etc. In 1952, the Italian government passed a law authorizing the expenditure of 750 million lire over a 3-4-year period for the adequate protection and disinfection of the libraries. Preventive measures have been taken already at Napoli, Firenze, Modena, Roma.

In 1958, the *Law against Prostitution* went into effect *in Italy.* A report of the Ministry of Interior shows that during the following years there was an increase in the various index numbers which reflect upon the sexual activities of the Italian people. In 33 provinces the number of prostitutes increased. In 17 provinces, more public scandals were observed. In 7 provinces the police had more to do with homosexuality. The sexual crimes also increased in 12 provinces. The *venereal diseases became more frequent* in 39 Italian provinces. The Minister also reported that the planned re-education of public prostitutes was a failure. Only 200 out of 7000 registered prostitutes took advantage of the present system of social re-adjustment which the Italian government offered to them.

The Sixteenth International *Congress of Military Medicine and Pharmacy* was held this year at the end of *April in Teheran.* The main arrangements were made by General Ayadi, Inspector General of the Iranian Armed Forces Medical Service. The main topics of the Congress were a) air evacuation over land and sea, b) standardization of initial surgical care of war wounds, c) prevention of viral diseases in military environment. The participants of the congress could make a detour on their way home to visit the Holy Land, the Holy Sepulchre, the Calvary, Mount of the Olives, Bethlehem and other ancient biblical places.

The Russians have been able to develop a *vaccine (formalinized) against tick encephalitis,* as announced by the *Ivanovsky Institute of Virology.* The vaccine is the fluid which is left at the chick-embryo culture of the encephalitis agent. This fluid, even after formalin treatment, retains high immunogenic and antigenic properties. The concentration of the formalin is 1 part to 2000 parts of the tissue fluid. It is exposed to 37°C heat for 12 hours. Mice which were treated with the native vaccine acquired a resistance up to 200-300. Alum-treated vaccines have a higher immunogenic potency. In human tests, the vaccine proved to cause no adverse reactions.

A British general practitioner wrote that there was still a tendency to look upon a hospital as a place for diagnosis and treatment of the more serious diseases of the community. The patients in England are still afraid to go to a hospital because they feel that *hospitals are places where most people die.* In the present hospital crisis of England, the feeling of some physicians is that the hospitals should provide more than a treatment of the diseases. They should act as *centers of local health services,* and they should provide domiciliary care, preventive medicine, and to pay more attention to the maintenance of health rather than to the cure of established diseases.

The authenticity of the following should not be questioned. A young American actress visited Europe, and during her roving of the continental cities she developed a kind of infectious skin disease on various parts of her body. The professor who she consulted for relief at the dermatological clinic of one of the European capitals told the young actress that the reason for her skin infection was her *extreme cleanliness.* "Do not use so much soap and bath and your skin will be better off"—the professor told his patient! Now, the seemingly paradoxic statement of the dermatologist was recently corroborated when members of the *Institute of Clinical Research of the Middlesex Hospital* (London) experimentally proved that the *effect of soap on the human skin* is such that the permeability of the skin will be increased. Thus, persons who constantly use detergents may lower the resistance of the skin toward allergenes as well as to the penetration of bacteria and bacterial products. Some soap solutions appear to be definitely irritant to the normal skin. At the same time, the permeability of the skin is also increased to water. . . . *Multa paucis!*

NOTES

Timely items of general interest are accepted for these columns. Deadline is 1st of month preceding month of issue.

Department of Defense

Ass't Secretary (Health & Medical)—HON. FRANK B. BERRY, M.D.
Deputy Ass't Sec'y—HON. EDW. H. CUSHING, M.D.

INDUCTION

The Department of Defense has asked Selective Service for only 5500 men for the Army for June. This figure is a marked reduction from that for previous months.

CONGRESS ON RESEARCH IN BURNS

The National Naval Medical Center at Bethesda, Maryland, will be the site of the first International Congress on Research in Burns to be held September 19 through 22.

This Congress, sponsored by the U. S. Department of Defense, will be attended by more than 100 scientists from Canada, Mexico, Chile, Peru, Scotland, England, Sweden, Yugoslavia, China, Italy, and the U.S.S.R.

Honorary chairman of the Congress is Dr. Frank Berry, Assistant Secretary of Defense (Health and Medical). The Congress co-ordinator is Dr. Curtis P. Artz, University of Mississippi Medical Center, Jackson, Miss.

AFIP RECEIVES GRANT FOR CANCER RESEARCH

The Armed Forces Institute of Pathology has been granted $8400 by the Damon Runyon Memorial Fund for Cancer Research.

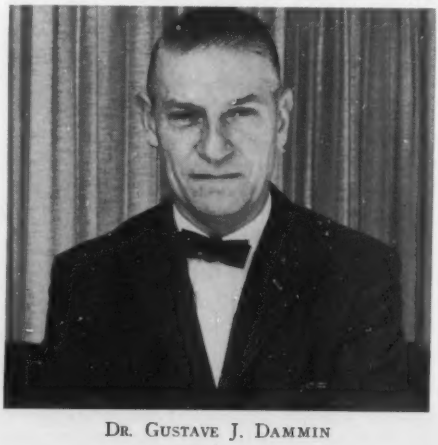
Dr. V. S. Waravdeker, Chief of the Biochemistry Branch of the Institute will apply the grant to the investigation of the relationship of diphosphopyreden nucleotide (DPN) synthesizing enzyme to tumor growth.

Investigators have found that when malignancy is present in the body DPN is lower, and when the malignancy is surgically removed the DPN returns to normal. *If* a direct relationship can be determined there may be established a diagnostic aid in cancer and a method for evaluating anti-cancer drugs.

EPIDEMIOLOGICAL BOARD PRESIDENT

Dr. Gustave J. Dammin, Professor of Pathology, Harvard Medical School, has been elected President of the Armed Forces Epidemiological Board. He replaced Dr. Thomas Francis, University of Michigan, who had served as President of the AFEB since January 1, 1958.

The Board, originally the Army Epidemiological Board, was established in January 1941 by the Secretary of War. Later (1949) this Board became known as the Armed Forces Epidemiological Board. This Board brings military and civilian personnel together to study, investigate, and make surveys on preventive medicine problems of military significance.



DR. GUSTAVE J. DAMMIN

Army

Surgeon General—Lt. Gen. Leonard D. Heaton
Deputy Surg. Gen.—Maj. Gen. Thomas J. Hartford

185th anniversary of medical service

By an Act of the Continental Congress under date of July 27, 1775, the Hospital Department of the Army was established with Dr. Benjamin Church as the Director General and Chief Physician.

Benjamin Church (1734-1776) was a native of Rhode Island. Although he was a distinguished physician he lacked administrative ability, and soon trouble arose. The ill feeling and lack of co-operation soon led to requests for an investigation. However, before such an investigation could get under way Dr. Church was found to be involved in correspondence with the British. This led to his being brought before a court of inquiry. In October 1775, Church was removed from his position as Director General, confined, but later released. He departed for the West Indies, but the vessel never arrived at its destination; in fact it was never heard from again.

John Morgan (1735-1789), a leading physician of Philadelphia replaced Church on October 17, 1775. He served until January 9, 1777 in a divided command with William Shippen, another eminent physician of Philadelphia. Trouble ensued and the doctors became unfriendly. A period of a few months elapsed in early 1777 when there was no head for the medical service.

Then, on April 11, 1777, Dr. Shippen was appointed as the Director General of the medical service.

It was not until April 18, 1818, during the reorganization of the Army Staff that a medical officer was elevated to the position of Surgeon General. This first Surgeon General, Joseph Lovell, a competent physician and executive, less than thirty years of age, and with about six years service, distinguished himself and his office. He served about eighteen years until his death in 1836. All that is another story, however.

assignments sgo

Colonel Renaldo G. Belanger, MSC, has been named Chief of the Supply Division in the Office of the Surgeon General. He is the second Medical Service Corps officer ever to head that division, the first one being Brig. General Edward Reynolds who held the position during World War II.

Colonel Belanger succeeds Colonel Theodore M. Carow, MC, who has been transferred to command the U. S. Army Hospital at Fort McArthur, California.

Colonel Wayne D. Shipley, VC, has been appointed Assistant Chief of the Veterinary Division, Office of the Surgeon General. He is a graduate of the Colorado State University, and during his service in the Army, which dates from 1935, he has been Director of Training and later Commandant of the U. S. Army Medical Service Meat and Dairy Hygiene School, Chicago.

Lt. Colonel Katharine E. Manchester, AMSC, will become Chief of the Dietitian Section and Assistant Chief of the Army Medical Specialist Corps, upon the retirement of Lt. Colonel Helen M. Davis, AMSC, in July.

Colonel Manchester has been Chief of the Food Service Division, Brooke General Hospital, Fort Sam Houston, Texas, since 1955. In 1948 she was selected to attend Cornell University for advanced study in the field of Institution and Personnel Management. She received a Master of Science degree in 1949.

Captain John Atkins, MSC, has been assigned to the Medical Plans and Operations Division, Surgeon General's Office. He served with the Fifth U. S. Army in Italy during World War II, and with the 24th Infantry Division in Korea during the Korean Conflict.

consultant in dietetics

Miss Fern W. Gleiser, Professor of Institution Management, University of Chicago, School of Business and former President of the American Dietetic Association,

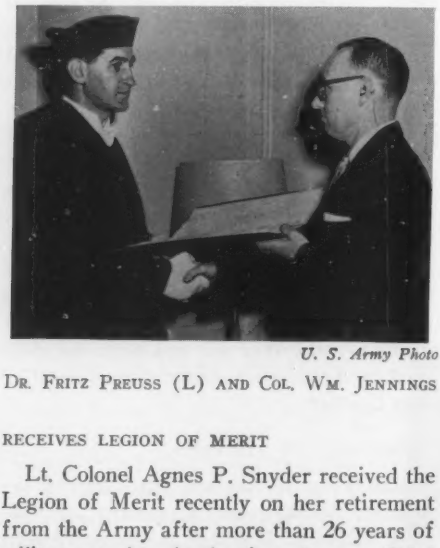
was recently appointed consultant in dietetics to the Surgeon General. She will work with the Chief of the Dietitian Section of the Army Medical Specialist Corps in the Surgeon General's Office.

VETERINARIAN HONORED

Colonel William E. Jennings, VC, formerly Chief Veterinarian of the U. S. Army Forces in Europe (1955-1958) was honored at the 7th International Congress of Anatomy held in New York City recently when he was presented with an honorary degree by Dr. Fritz Preuss, Dean of the Free University of Berlin.

Colonel Jennings, now Chief Veterinarian of the Fifth Army (Headquarters in Chicago) is the first American to receive the Award which was granted for his contribution to veterinary education.

He is a graduate of Cornell University (1931), taught at Kansas State and Cornell and has been on the faculty of the Army Medical Service School at Brooke Army Medical Center, San Antonio, Texas. He is now a member of the Council on Education, American Veterinary Medical Association.



U. S. Army Photo

DR. FRITZ PREUSS (L) AND COL. WM. JENNINGS

RECEIVES LEGION OF MERIT

Lt. Colonel Agnes P. Snyder received the Legion of Merit recently on her retirement from the Army after more than 26 years of military service. At the time she was Chief

U. S. Army Photo

BRIG. GEN. JAMES L. SNYDER pins the Legion of Merit to uniform of LT. COL. AGNES P. SNYDER.

of the Physical Medicine Branch at the Army Medical Service School, Fort Sam Houston, Texas. The award was presented to her by the Commandant of the Army Medical Service School, Brigadier General James L. Snyder, MC, USA.

Colonel Snyder served as Chief of the Physical Therapy Section, Office of the Chief of the Army Medical Specialist Corps, Surgeon General's Office, prior to the assignment to the Army Medical Service School. She is currently President of the American Physical Therapy Association and had served as Speaker for the House of Delegates of the APTA earlier. She will make her home at 162 Davis Court, San Antonio, Texas.

EARNS SWEDISH "MEDICINE DOKTOR" DEGREE

Captain Victor H. Frankel, MC, USAR, formerly Chief of Physical Medicine and Rehabilitation at Womack Army Hospital, Fort Bragg, North Carolina, has received the lofty and coveted degree of "Medicine Doktor" from Uppsala University, Sweden. He is the first American doctor to fulfill the requirements.

He had to publicly defend his doctoral dissertation entitled "The Femoral Neck; An Experimental Study of Its Function, Fracture Mechanism and Internal Fixation."

The dissertation is formally made public

three weeks in advance by "nailing" it to the university bulletin board. At a designated time and place and in white tie and tails the candidate is opposed by three highly qualified doctors. The opposition does not stop there for the public can then question the candidate at the meeting place.

Dr. Frankel, a graduate of Swarthmore and the University of Pennsylvania Medical School (1951) is from Wilmington, Delaware.

WARS

War situations to at least the number of seventeen have arisen since 1945. These averaged 2½ years in duration with nearly 600,000 men involved. Many of these have been communist inspired. And they say they want peace.

Navy

Surgeon General—REAR ADM. BARTHOLOMEW W. HOGAN

Deputy Surgeon General—REAR ADM. EDWARD C. KENNEY

ASSIGNMENTS BUMED

Captain John W. Albrittain, MC, USN, has assumed the duty as Director of Professional Division, Bureau of Medicine and Surgery. He replaced Captain Malcolm W. Arnold, MC, USN, who has been assigned as Commanding Officer of the U. S. Naval Medical School, National Naval Medical Center, Bethesda, Md.

Captain Edwin B. Coyl, MC, USN, has been appointed Inspector General, Medical, Bureau of Medicine and Surgery. He was formerly Commanding Officer of the U. S. Naval Hospital, Newport, R.I.

PORTSMOUTH HOSPITAL

The new U. S. Naval Hospital, Portsmouth, Virginia, was dedicated on April 22. The dedicatory address was given by Rear Admiral Edward C. Kenney, Deputy and Assistant Chief of the Bureau of Medicine and Surgery. The hospital was accepted for the service by Rear Admiral H. J. Van Peenen, MC, USN, Commanding Officer.

This new hospital built at a cost of approximately $15 million replaces the original naval hospital built between 1827-1832 and used until recently. Ground breaking ceremonies for the new 800-bed "skyscraper" hospital were held in June 1956.

HANDBOOK OF HOSPITAL CORPS

The revised edition of "Handbook of the Hospital Corps United States Navy" will be sold on a subscription rate of $10.00 domestic, and $12.50 for foreign mailing. Single chapters will not be sold. Back issues will be furnished.

The subscription service consists of a looseleaf binder and approximately 17 chapters with separators. The chapters will not necessarily appear in numerical order. After all chapters appear only the bound book will be sold.

Please note the correction in price from that mentioned in the April issue of MILITARY MEDICINE. The domestic price is $10, not $12.50 as previously stated. Subscription should be placed with the Superintendent of Documents, Government Printing Office, Washington 25, D.C.

RETIREMENTS

The following officers of the Navy have recently retired: Captains Clifford E. Allen, DC; Leonard H. Barber, MC; Clinton K. Higgins, MC; Jerry T. Miser, MC; and Lieutenant Commander Thomas G. Fowler, MSC.

Air Force

Surgeon General—MAJ. GEN. OLIVER K. NIESS

Deputy Surg. Gen.—MAJ. GEN. JOHN K. CULLEN

VISITS SURGEON GENERAL

Miss Mary Kuntz of Columbus, Ohio, President, National Student Nurses Association recently visited in the Office of the Surgeon General of the Air Force. She was briefed on the importance of the nurse in

COL. ZELLER, MAJ. GEN. O. K. NIESS, AND MISS MARY KUNTZ

this Aerospace Age by Major General O. K. Niess, the Surgeon General, and Colonel Dorothy Zeller, Chief of the Air Force Nurse Corps.

RECEIVES AWARD

Colonel Harry A. Gorman, USAF (VC) was recently selected by the Omega Tau Sigma Professional Fraternity to receive the National Gamma Award for 1960 for his work on the artificial hip.

Colonel Gorman, now Chief of the Department of Veterinary Services, School of Aviation Medicine, Brooks Air Force Base, Texas, was at Ohio State University when he began work on the artificial hip joint. Originally it was used for dogs who were crippled by accident or disease, but the artificial hip joint has been modified for use in human beings. An account of his procedure was published in MILITARY MEDICINE, Volume 121:91-93, August 1957, entitled "A New Prosthetic Hip Joint—Experiences in Its Use in the Dog and Its Probable Application to Man."

Official Air Force Photo

COL. H. A. GORMAN studies a model of his prosthesis.

SPACE EXHIBIT

The U. S. Air Force Aerospace Medical Center, Brooks Air Force Base, Texas, has sent a space medicine exhibit to five countries. The exhibit will appear in Casablanca, Morocco; Lisbon, Portugal; Spangdahlem and Ramstein Air Bases, Germany; Hälsingborg, Sweden; and The Hague, Netherlands.

Featured is the biopac in which a Rhesus monkey rode to the fringes of space last December. The monkey in all the comfort that could be provided, such as a couch and air conditioning, rode into space and all it had to do was to pull a lever similar to an aircraft control stick. This monkey was trained to pull the stick when a light in its little cabin was flashed on. The purpose of such an experiment was that of determining the monkey's reaction at these high altitudes. Of course, all these reactions were recorded for later study.

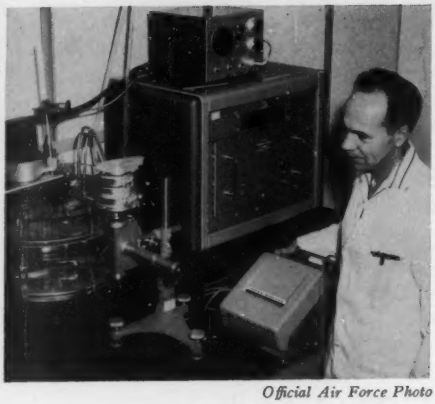
A mouse biopac is also a part of the display. This weighs ten pounds and can sustain four mice in space for three days. This likewise is air-conditioned. A radio system transmits the physiological reactions of the mice to Earth receiving stations.

Captain Harold L. Bitter, research physiologist and Senior Master Sergeant Jack Walker are in charge of the exhibit.

CASI

Measuring movements and patterns of biological fluids must be accurate to 6,000th of an inch for Dr. William G. Glenn, immunologist in the Department of Microbiology, Air Force School of Aviation Medicine, San Antonio, Texas.

Since there was no device on the market



Official Air Force Photo

Cathometer, the three-legged stand at left of center, measures specimens in tubes in revolving water tank. The measurements are flashed to oblong screen and recorded by printer on which Dr. Glenn's right hand rests.

that would do this job, Dr. Glenn designed one. He calls the new mechanism "Casi" for Cathetometer Shaft Indicator. This machine cost $4000, is the only one of its kind, and is said to save much time and to be more accurate in the tests on kidney function as it relates to the distribution of protein in the body. The Doctor can now make 102 measurements in 70 minutes.

Public Health Service

Surgeon General—LEROY E. BURNEY, M.D.
Deputy Surg. Gen.—JOHN D. PORTERFIELD, M.D.

ASSIGNMENTS

Dr. Kenneth M. Endicott has been appointed as director of the National Cancer Institute of the National Institutes of Health, Bethesda, Maryland. He succeeds Dr. John R. Heller who has resigned to become president of Memorial Sloan-Kettering Cancer Center. Dr. Endicott has been associate director at the National Institutes of Health.

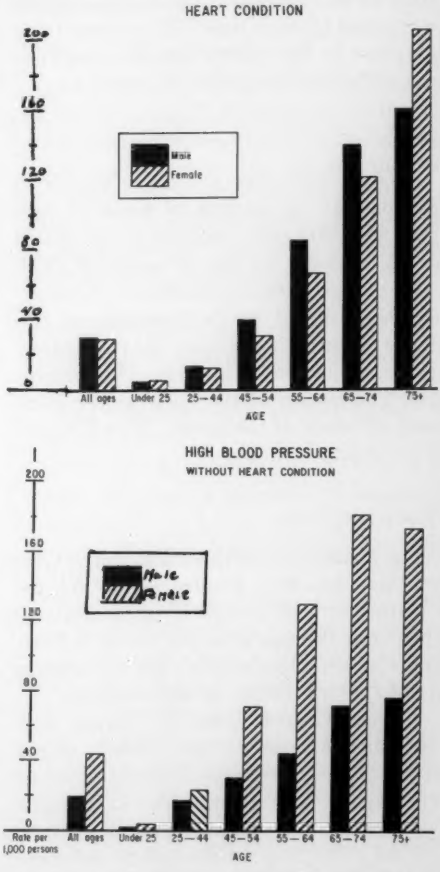
Dr. David E. Price has become Deputy Director of the National Institutes of Health.

Dr. Theodore J. Bauer has been appointed Chief of the Bureau of State Services, U. S. Public Health Service. This is one of the three bureaus of that Service. In this position he will have the rank of a major general but the title will be Assistant Surgeon General.

HEALTH STATISTICS

Heart Conditions and High Blood Pressure—reported in interviews, U. S. July 1957-June 1958 (PHS Publ. 584-B13), is a 36-page booklet giving the statistics as a result of interviews over the country.

The booklet is available from the Super-



Number of persons per 1,000 population with a heart condition or high blood pressure without a heart condition by sex and age.

intendent of Documents, Government Printing Office, Washington 25, D.C., for 30¢ a copy.

WATER POLLUTION CONFERENCE

A national conference on water pollution will be held at the Sheraton-Park Hotel, Washington, D.C., December 12-14, 1960. Theme of the Conference will be "Problems and Progress in Water Pollution Control."

Dr. Leroy E. Burney, Surgeon General, has appointed Mr. Frank Butrico, Chief of the Office of Engineering Resources, Public Health Service, to be full-time executive secretary of the conference, which it is said will be attended by more than 1000 persons from all groups in the country who have any concern with the water pollution problem.

POLIO

Paralytic polio cases are less in number so far this year. In the first 19 weeks of 1960 there were 203 cases reported, as compared to 305 cases for the first 19 weeks of 1959.

While the decreased number is encouraging there should be no lessening of our efforts to curb this disabling disease, and our aim should be total eradication of poliomyelitis. Vaccination is the answer. We must reach all levels of the people. No effort will be too great.

PRIMATE CENTER

The Medical Research Foundation of Oregon, Inc., has been granted money for the construction and operation of a Regional Subhuman Primate Research Center in Portland, Oregon. Operation is expected to begin in 1961 with a colony of 400 monkeys.

Surgeon General Leroy E. Burney said, "Non-human primates have already played an important role in the research effort of this country. The giant strides of the past few years in the conquest of yellow fever, malaria, tuberculosis, poliomyelitis, and mental disorders, to mention only a few examples, would have been impossible without the use of monkeys."

CIVIL DEFENSE

We can expect increased emphasis on emergency medical and health training by the Public Health Service through courses that are being offered over the country. Three of these courses were given recently: one in Brooklyn, one in Battle Creek, Michigan; and one in Alameda, California.

Dr. Carruth J. Wagner, head of the Division of Health Mobilization, Bureau of State Services, said, "Purpose of the courses is to bring the most up-to-date disaster information and training to a nucleus of professional personnel concerned with medical and health needs of the civilian population in an emergency. Conduct of training has been given priority by the Division of Health Mobilization in the discharge of its responsibilities for certain medical and health functions in disasters, both natural and manmade."

Some of the subjects presented are: medical self-aid; medical care by allied medical personnel; emergency hospital layout; radiological, biological, and chemical warfare; preventive medicine; epidemiology in disaster; disaster sanitation; community health services planning; basic instruction techniques.

The faculty is comprised of nationally-known specialists in each of the areas concerned and includes personnel from branches of the Armed Forces, civilian government, industrial physicians, and private practitioners.

Members of the Armed Forces on the faculty are: Colonels Albert J. Glass, MC, USA; Frank A. Newman, MC, USA; Lieutenant Colonels: George F. Rumer, MC, USA; William W. Southard, MSC, USA; Robert E. Van Gilder, MSC, USA; Major James D. Clark, USAF (MSC); and N. J. Suggs, Medical Instructor, Gunter Air Force Base, Alabama.

MEDICAL LIBRARY INTERNS

From seventeen applicants, three have been chosen as interns at the National Library of Medicine for 1960-61. They are: Miss Patricia A. Dabney, University of Illinois; Miss Judith M. Williston, University

of Wisconsin; Mr. Irwin Pizer, Columbia University.

LUPUS ERYTHEMATOSUS

Disseminated lupus erythematosus with its many manifestations is reported to be more easily diagnosed now by a simple test which has been reported by John Bozicevich and Doctors John P. Nasou and Donald E. Kayhoe of the National Institutes of Health, Bethesda, Maryland.

Bentonite and desoxyribonucleic acid (DNC) are used with a drop of the patient's serum. Flocculation results if the disease is present. This method has a definite advantage over the L.E. cell test since fresh blood is not necessary for the test. Serum is used and this can be transported to a distant laboratory.

Q FEVER

According to the work of Dr. Lauri Luoto which has been reported in *Public Health Reports* the disease Q fever is more widely distributed in the United States than formerly believed. The disease is apparently on the increase. Dr. Luoto is on the staff of the Hamilton, Montana, Rocky Mountain Laboratory of the National Institute of Allergy and Infectious Diseases.

Herds of dairy cattle have been tested for antibody against *Coxiella burnetii,* the causative organism of Q fever. The reactions noted are arguments for the statement of the spread of the disease.

Morbidity is a factor rather than mortality. Malaise, fever, and pneumonitis are the symptoms. The disease yields to some of the antibiotics.

STRONTIUM-90

Bones from 46 individuals in 6 Western States where it was suspected that the strontium-90 content would be the highest do not show any significant differences over those of other sections of the country. Of course, more study will have to be made before definite conclusions can be reached.

The research involves the cooperative work by state and local health agencies and by local physicians who send sections of bone obtained at autopsy or as surgical specimens to the Public Health Service laboratory at Cincinnati.

MENTAL HEALTH BOOKLET

Highlights of Progress in Mental Health Research—1959 (PHS Publ. No. 736) is a 51 page booklet which presents accounts of some of the studies made at the National Institute of Mental Health, National Institutes of Health, Bethesda, Maryland, and elsewhere by grants from that institution.

This very informative booklet can be obtained from the Government Printing Office, Washington 25, D.C., for 25¢.

PUBLICATION AVAILABLE

Cerebral Palsy—Hope Through Research (PHS Publ. No. 713) is a brochure that explains some of the problems in this disease. Single copies may be obtained from the Public Health Service; quantity orders cost $3.00 per 100 and can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C.

FILMS AVAILABLE

Public Health Nursing in Communicable Disease Control (F-417), a 35 mm. color, silent filmstrip, with printed guide; 49 frames.

The Nurse—Epidemiologist (F-361), a 35 mm. color, sound, filmstrip, 95 frames, 14 minutes.

How to Observe Nursing Activities (FG-315).

This is a two part film that has been cleared for television. A copy of the manual, "How to Observe Nursing Activities in a Patient Unit" accompanies the film. Part I describes a nursing activities study and explains how any nurse may be trained to observe the activities of nursing personnel. This is a 16 mm., black and white film, sound, running time of 14 minutes (512 ft.). Part II illustrates activities which are difficult to identify because the purpose of the service performed is not apparent. This is also a 16 mm. black and

white film, sound, having a running time of 9 minutes, 43 seconds (350 ft.).

Introduction to Swimming Pool Sanitation (M-402), a 16 mm. color, sound, motion picture film, running time 23½ minutes (846 ft.).

May be used as an aid for organizing scheduled lectures.

Listeriosis (F-399), a 35 mm. color, silent filmstrip with printed text and guide; 45 frames.

This is a resume in pictures of diagnostic characteristics of Listeriosis from a clinical and a bacteriological viewpoint.

The above films may be obtained on a short-term loan (U.S. only), from the Communicable Disease Center, PHS, P.O. Box 185, Chamblee, Georgia.

Veterans Administration

Chief Medical Director—WILLIAM S. MIDDLETON, M.D.

Deputy Chief Med. Dir.—H. MARTIN ENGLE, M.D.

ASSIGNMENTS

Dr. Charles P. Henke has been appointed as director of domiciliaries for the Veterans Administration in Washington Central Office. He succeeded Dr. M. H. Travers who has retired.

Dr. Henke served with the Army Medical Corps from 1945 to 1947, and for a period of ten months during 1953 was on active duty with the Air Force. He is a diplomate of the American Board of Surgery.

Dr. Oreon K. Timm has succeeded Dr. Horace B. Cupp as deputy to the Veterans Administration assistant chief medical director for operations. Dr. Cupp has retired.

Dr. Timm, a graduate of the Washington University School of Medicine, St. Louis, joined the VA in 1938. He was on active duty as psychiatrist in the Army from 1944 to 1946.

COCCIDIOIDOMYCOSIS

Coccidioidomycosis of the lungs can be successfully treated by surgery in many cases according to a report from an 18-hospital Veterans Administration—Armed Forces cooperative study of the disease.

Dr. David Salkin of the San Fernando, California, VA hospital said that the surgery presents no greater problems than surgery for tuberculosis of the lungs.

There is no specific drug for coccidioidomycosis but studies are being made with amphotericin-B.

The disease which is due to the fungus *Coccidioides immitis* has been recognized in California, where it is most prevalent, since 1894. There has been a gradual spread in the southwestern part of the United States, and the spread of the disease is being noticed further eastward now.

CORONARY HEART DISEASE STUDY

An evaluation of the surgical procedures for coronary artery disease is being made by the Veterans Administration by the study of more than 300 patients that have been operated on in the past five years.

Dr. Lyndon E. Lee, Jr., of the Veterans Administration Central Office in Washington is the coordinator for the study. Sixteen hospitals are participating in the survey. Dr. Lee has said, "This study involves a review of results, development of a controlled study on procedures, and an intensive effort to develop one or more improved surgical approaches to this widespread disease."

ISONIAZID

A 58-hospital study by the Veterans Administration shows that very high dosage of isoniazid is no more effective than the dosage in the commonly used isoniazid-PAS drug combination for tuberculosis patients with lung cavities. In addition, the higher dosage is more likely to produce undesirable drug reactions and does not slow the rate at which the tubercle bacillus develops drug resistance.

These findings were reported recently by Dr. H. William Harris, Salt Lake City Veterans Administration hospital at the 19th VA-Armed Forces Conferences on Chemotherapy of Tuberculosis held in Cincinnati.

RESOCIALIZATION

The term "resocialization" has been applied to a comparatively recent method of dealing with mental illness patients. The pioneering center in the Veterans Administration was the VA Clinic in Brooklyn, New York. There are now five such "day centers" as they are termed.

Some of the activities of these centers which have been formed for the purpose of saving hospital beds for the acutely ill mental patients as well as to "resocialize" patients are the periods of group psychotherapy, arts and crafts, discussions led by librarians, field trips, and family days. It has been found that the gradual readjustment to society is greatly benefiting patients suffering from mental illness.

Miscellaneous

APPOINTED DEAN

Dr. Lamar Soutter, Professor of Surgery at Boston University School of Medicine, has been appointed Dean of that school. He has been Acting Dean since September 1959.

During World War II he was in command of a surgical team in General Patton's Army and received the Silver Star for leading his team by glider into Bastogne when it was surrounded.

He is Area Consultant in Thoracic Surgery for the Veterans Administration. He was the first head of the blood section of the State Civil Defense Agency.

SHIP SURGEON

The first atomic-powered merchant ship, *Savannah,* will have as its medical officer, Doctor R. F. Peters, a graduate of the University of Pittsburgh Medical School. He is from Brownsville, Pa.

REUNION

The 95th Infantry Division Association Veterans (WWII) will hold its 11th Annual Reunion at the Shoreham Hotel, Washington, D.C., August 19-21. Chairman is Arthur H. Rice, 2231 California Street, NW, Washington, D.C. National Headquarters address is P.O. Box 1274, Chicago 90, Ill.

INTERNATIONAL FEDERATION OF PHYSICAL MEDICINE

Bernard M. Baruch will speak at the 3rd International Congress of Physical Medicine, to be held in Washington, D.C., August 21-26.

Delegates from 27 countries are expected to attend the sessions which will be devoted to clinical, remedial, preventive and educational aspects of physical medicine and rehabilitation.

Press Headquarters for the Congress are at 2412 Foshay Tower, Minneapolis 2, Minn.

GRAFTS FROM THE DEAD

The Swedish Parliament has adopted legislation to facilitate the taking of grafts from the dead. The transfer is comparatively simple from the legal aspect when both the donor and recipient are alive, but surgeons have hesitated to help themselves to grafts from the dead when the transaction has not been legalized by some formal declaration from the prospective donor or his relatives. The new law entitles certain hospital surgeons to take tissues from patients who have died in the hospital or who have been brought in dead. A safeguard against any abuse of this privilege is provided by a clause giving hospital patients or their nearest relatives the right to anticipate and prevent such action by forbidding it in advance.—*Bulletin for Medical Research,* 14:3, Jan.-Feb. 1960.

CHART FOR APHASIA PATIENTS

The "Hand Talking Chart" which is a practical clinical aid for aphasia patients has 20 hand signs for communicating with those attending such patients.

The chart was devised by Dr. Hamilton Cameron, 601 West 110th Street, Suite 3LL, New York 25, N.Y., who was stricken by coronary thrombosis and later developed a cerebral embolism which resulted in right hemiplegia and aphasia.

FILM ON CONTROL OF HOSPITAL INFECTION

A 16 mm. color with sound film—running

time 22 minutes—has been produced at the University of Texas Medical School and the John Sealy Hospital in Galveston for the Winthrop Laboratories for the purpose of presenting some of the important bacteriologic facts concerning resistant staphylococcus and its spread through a hospital.

Requests to view this movie should be made to Winthrop Laboratories, 1450 Broadway, New York 18, N.Y.

BACK PAIN

Dr. M. Laurens Rowe of Rochester, New York, at the Industrial Health Conference held in that city recently pointed out that one way to reduce hyperextension, and consequent low backache, during long periods of standing is to place one foot on a low stool or platform. He said that this method of preventing back pain is particularly helpful to housewives with back trouble. The method has particular merit when ironing.

STRONTIUM 90

Recent reports from the Atomic Energy Commission on fallout show that the strontium 90 intake of the U.S. population from all dietary sources does not constitute a public health hazard warranting any regulatory action.

The guideline for average daily intake of strontium 90 used by the Department of Health, Education, and Welfare at the present time is 33 micromicrocuries per liter or kilogram of total dietary intake averaged over a period of one year. This value is derived from a recent interim recommendation of the National Committee on Radiation Protection and Measurements that values suggested by the International Commission on Radiation Protection for planning purposes be accepted.

(A curie is a measure of radioactivity equivalent to that produced by 1 gram of radium. A micromicrocurie is one millionth of a curie.)

DRIVERS LICENSES

Pennsylvania is getting stricter on the granting of drivers licenses. Physical examinations are being required for those applying for a license for the first time, and for those who were licensed before 1924. Any physician (presumably licensed in Pennsylvania) may perform the physical examination. Certain standards must be met before the individual is allowed to take the driving test.

"NO-YIELD BULLY" IS UNWANTED DRIVER

Michigan police officials singled out the "No-Yield Bully" as the last in a series of Unwanted Drivers who account for most of the traffic accidents. Posters distributed throughout the State describe "No-Yield Bully" as being anyone, any age, of either sex, who may appear pleasant until behind the wheel of an automobile; then he becomes a boor who likes to get his own way by insisting on keeping or taking the right-of-way in traffic.

The record of the "No-Yield Bully" included the death of 94 Michigan people last year, serious injuries to over 2,500, and involvement in thousands of property-damage crashes with an estimated economic loss of $13 million in that State.—*Bulletin,* American Assoc. of Motor Vehicle Administrators.

SPEED

Drive a 10-mile trip at 50 and you need 12 minutes. Increase to 60 and you might save 2 minutes. Increase to 80 and you might —although the chances are slimmer—save 4½ minutes. Those tempted to step on it might well ask themselves what they are going to do with these so preciously purchased minutes—*if they survive.*—Virginia Traffic Safety News.

PSYCHIATRY

A reporter phoned a Hollywood actress to ask her opinion of a recent foreign film. "I'm sorry, I can't answer your question," she said. "My psychiatrist is out of town and I don't know what to think."—Clarence Roeser, *Catholic Digest.*

TRAVEL

Every year it takes less time to fly across the Atlantic and more time to drive to the office.—*American Mercury.*

New Members

Rodney Fitzgibbon, M.D.
Col. Mitchel M. Paule, DC, USAF Ret.
Capt. Joseph F. Powers, MC, USA
Dr. Harald J. Von Beckh
Sr. Dent. Surg. Dallas C. Sigwart, USPHS
Major Karel Runcik, MC, USA
Lt. Louis A. Finney, MC, USN
Major Henry L. Zak, DC, USA
Herbert Volk, M.D.
Cdr. Robert C. Lofgren, MC, USNR
Surg. Kenneth E. Ambrose, USPHS-R
Sr. Surg. William L. Roberson, USPHS-R
Sr. Asst. Surg. Theodore R. Carski, USPHS (Inact.)
Med. Dir. Gazumi Kasuga, USPHS
A. Pharm. Charles N. May, USPHS-R
Major Robert Bravo Fourcaud, MC, USAR
Major Willis L. Fredricksen, MSC, USA
SA Surg. Alfonso H. Holguin, USPHS
Sr. Asst. Surg. Guy V. Spinello, USPHS
Phedon Kachtitsis, M.D.
Capt. James Earl Harris, MC, USAF
Lt. Richard H. Searl, MC, USNR
LCdr. R. E. George, DC, USN
Col. Saul Solomon, MC, USAR
LCdr. Claude H. Organ, MC, USNR (Inact.)
Capt. Alfred J. Spiry, MSC, USAF-R
Lt. Morton H. Perlman, MC, USPHS
SA Dent. Surg. James M. Van Soest, USPHS-R
Gerald M. Schumann, M.D.

LATE NEWS

Recently Promoted

To Major General: John K. Cullen, USAF, MC; and M. S. White, USAF, MC.

To Brigadier General: Raymond T. Jenkins, USAF, MC; and Aubrey L. Jennings, USAF, MC.

Recently Retired

Dr. Roy A. Wolford, who has been Deputy Chief Medical Director of the Veterans Administration, retired April 30 after forty years service with the government medical services. He will retain his residence in Washington, D.C.

Recently Appointed

Dr. H. Martin Engle, formerly Manager of the Veterans Administration Hospital in Denver, has been appointed Deputy Chief Medical Director of the Veterans Administration. Dr. Engle served with the Army Medical Corps during World War II, attaining the rank of major.

NEW BOOKS

Books May Be Ordered Through The Association

Ciba Foundation Study Group No. 4, Virus Virulence and Pathogenicity, Editors G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Cecilla M. O'Connor, B.Sc., Little, Brown and Company, Boston, Mass. Price. $2.50.

Pediatric Anesthesiology, M. Digby Leigh, M.D., and M. Kathleen Belton, M.D., The Macmillan Company, New York 11, N.Y. Price $12.00.

Worlds Review of Nutrition and Dietetics, Geoffrey H. Bourne, J. B. Lippincott Company, Philadelphia, Pa. Price $12.00.

The Ego in Love and Sexuality, Edrita Fried, Grune & Stratton, Inc., New York 16, N.Y. Price $5.50.

Intraarterial Infusion of Procaine in Therapeutic Practice, N. K. Gorbadei, Consultants Bureau, Inc., New York, N.Y. Price $7.50.

Basic Facts of Body Water and Ions, Stewart M. Brooks, M.S., Springer Publishing Co., Inc., New York 10, N.Y. Price $2.75.

A Manual of Tropical Medicine, George W. Hunter, III, Ph.D., Col. USA, Ret.; William W. Frye, Ph.D., M.D., Sc.D. (Hon.); J. Clyde Swartzwelder, Ph.D., W. B. Saunders Company, Philadelphia, Pa. Price $15.00.

Principles of Pathology, Howard C. Hopps, M.D., Appleton-Century-Crofts, Inc., New York 1, N.Y. Price $6.95.

Textbook of Surgery, Warren H. Cole, M.D., F.A.C.S., Appleton-Century-Crofts, Inc., New York 1, N.Y. Price $17.00.

Outline of Orthopaedics, John Crawford Adams, M.D. (London), F.R.C.S. (England), The Williams & Wilkins Co., Baltimore, Md. Price $8.00.

Surgery of Repair as Applied to Hand Injuries, B. K. Rank, C.M.G., M.S. (Melbourne), F.R.C.S. (England), F.R.A.C.S.; and A. R. Wakefield, M.S. (Melbourne), F.R.C.S. (England), F.R.A.C.S., The Williams & Wilkins Co., Baltimore, Md. Price $9.00.

First Aid Diagnosis and Management, Warren H. Cole; Charles B. Puestow, Appleton-Century-Crofts, Inc., New York, N.Y. Price $6.25.

The Professional Soldier, Morris Janowitz, The Free Press, Glencoe, Ill. Price $6.75.

Doctor in Bolivia, H. Eric Mautner, M.D., Chilton Company, Philadelphia, Pa. Price $5.95

Medical Care of the Adolescent, J. Roswell Gallagher, M.D., Appleton-Century-Crofts, Inc., New York, N.Y. Price $10.00.

The Child in Hospital, Hedley G. Dimock, Ph.D., F. A. Davis Co., Philadelphia, Pa. Price $4.50.

Differential Diagnosis of the Electrocardiogram, Sidney R. Arbeit, M.D., F. A. Davis Company, Philadelphia, Pa. Price $10.50.

Bone X-Ray Diagnosis, George Simon, M.D., F. A. Davis Company, Philadelphia, Pa. Price $10.50.

Clinical Endocrinology I, Edwin B. Astwood, M.D., Editor, Grune & Stratton, Inc., New York, N.Y. Price $18.75.

Communicable and Infectious Diseases, Franklin H. Topp, A.B., M.D., C. V. Mosby Company, St. Louis, Mo. Price $20.00.

Metal-Binding in Medicine, Editor, Marvin H. Seven, M.D., Assoc. Editor, L. Audrey Johnson, M.D., J. B. Lippincott Co., Philadelphia, Pa. Price $13.75.

The Officer's Guide, The Stackpole Company, Harrisburg, Pa. Price $6.00.

Naval Logistics, Vice Admiral George C. Dyer, USN, Ret., United States Naval Institute, Annapolis, Md. Price $5.00.

Osteochondritis Dissecans, I. S. Smillie, O.B.E., Ch.M., F.R.C.S. (Ed.), F.R.F.P.S., The Williams & Wilkins Co., Baltimore, Md. Price $12.50.

BOOK REVIEWS

CLINICAL ORTHOPAEDICS. No. 14. Recent Advances in Orthopaedic Surgery in Infancy and Childhood. Edited by Albert B. Ferguson, Jr., Guest Editor; Anthony F. DePalma, Editor-in-Chief. 193 pp., illust. J. B. Lippincott Company, Philadelphia. Price $7.50.

This volume of *Clinical Orthopaedics* is as those in the past have been, an excellent production.

Section I deals with recent, advances in orthopaedic surgery both in infancy and also in childhood. There are numerous articles dealing with, for instance, congenital absence of the fibula, growth problems, management of the juvenile amputee, treatment of Legg-Perthes, Osteogenic sarcoma, cerebral palsy, anteversion of the femoral neck, osteomyelitis, Engelmann's disease.

Section II deals with general orthopaedic problems such as surgical endeavors in arthritis, lumbar disk lesions, painful coccyx, correction of metatarsus primus varus, metatarsus latus and parosteal osteogenic sarcoma.

Section III contains items concerning the operative treatment of diaphyseal fractures in children by Dr. Polo from Mexico City and a report of a case of coccidioidomycosis of the hip joint.

Also doctors are encouraged to utilize the latest anatomic terminology, that is, Nomina Anatomica; these are international names and terms which should help promote good international relations among the doctors of the world.

All in all this is a most excellent production.

W. COMPERE BASOM, M.D.

PYELONEPHRITIS. By Fletcher H. Colby, M.D. 214 pp., illust. The Williams & Wilkins Company, Baltimore. Price $7.50.

Dr. Colby has written a very informative monograph on Pyelonephritis which he states "has become one of the foremost problems in medicine." He emphasizes that while acute pyelonephritis is easily diagnosed and treated, the chronic form is difficult to diagnose—often there is no antecedent history, and the diagnosis is missed or misdiagnosed as chronic nephritis. He makes a strong plea for adequate and complete treatment of the acute form so as to avoid the subsequent development of the chronic form—by removal of obstructions in the urinary tract, correction of vesico-ureteral reflux, etc. In spite of this, cases of chronic pyelonephritis will still occur, escape proper diagnosis and treatment. Hence a complete medical and urological workup including renal biopsy is essential to make the proper diagnosis and to start correct treatment. He discusses the etiology, x-ray findings and treatment for the acute and chronic forms, with a review of present antibiotics. He points out that patients with Diabetes Mellitus have greater susceptibility to pyelonephritis—he notes that in patients in supposed diabetic coma who do not respond to diabetic measures, the possibility of chronic pyelonephritis as a cause of the patient's condition to be considered and appropriate treatment given. A discussion of pyelonephritis in infancy and childhood, pregnancy and in association with hypertension is also given. The criteria for nephrectomy in hypertension in unilateral renal disease are reviewed. The importance of absolute sterile technique by the examining urologist is stressed. Each chapter is followed by a bibliography. The book is well written, is enjoyable reading and can be read at one sitting. It deserves a place in the library of every urologist, internist and practicing general practitioner.

ALAN L. KLEIN, M.D.

CHRISTOPHER'S MINOR SURGERY. 8th Ed. Edited by Alton Ochsner, M.D., and Michael E. DeBakey, M.D. 24 contributors. W. B. Saunders Company, Philadelphia and London. Price $10.50.

This book, as was the Seventh Edition, is a departure from Christopher's original idea of his "Minor Surgery" in that it is by multiple authors instead of one another. The multiple authorship idea has certain advantages in that it enables men with special interests to write on their special subjects. However, it has one disadvantage in that they are apt to become too detailed and too all inclusive in discussing their subjects, rather than sticking to the idea of a real "Minor Surgery."

The editors very properly state in their preface that no surgery is "minor", at least so far as the patient is concerned. The object of the book is to provide a ready manual for minor procedures for the busy practitioner, the house officer, or medical student. This was Christopher's original idea, which has been departed from somewhat in the more elaborate multiple author treatment of special subjects. The present excellent work is more of a diagnostic text for minor (as well as some major) conditions, rather than a technical manual describing the technique of minor procedures. For instance, I can find no description of how to irrigate an ear for the removal of wax, of how to treat a blister, how to do an abdominal paracentesis, or to make a

bone marrow smear. The treatment for bone fellon is neglected probably because it is so seldom seen any more.

Subluxation of the head of the radius is so commonly encountered in small children, the cure is so simple, and the result so dramatic, that it seems to me that it does deserve a special paragraph heading. The injury is discussed under the heading of "Dislocation of the Elbow" but is hardly as much stressed as this rather common minor injury should be.

The comparatively new, but now well recognized, injection treatment of internal hemorrhoids is amply covered.

The book is excellently done and the distinguished editors have also contributed excellent chapters to the text.

AMOS R. KOONTZ, M.D.

MEDICINE MANAGEMENT OF THE MENOPAUSE. By Minnie B. Goldberg, M.D. 98 pp. Grune & Stratton, New York and London. Price $4.50.

This monogram will be of interest to every practicing physician. It covers all facets of menopause from symptomatology to treatment. The basic argument whether menopause is a rebellion against the process of aging or stems from hormonal imbalance is ably presented. Judicious use of hormones in the treatment of menopause is advocated. Their chemical relationship notwithstanding, the carcinogenic action of estrogens as used in the treatment of menopause, is disputed and disapproved by statistical data. The case histories from the author's private practice add to the value of this excellent monogram.

M. MONIAS, M.D.

BACTERIOLOGY FOR STUDENTS OF DENTAL SURGERY. 2nd Ed. By R. B. Lucas, M.D., D.P.H., and Ivor R. H. Kramer, M.D.S. 288 pp., illust. Little, Brown and Company, Boston. Price $6.00.

All the material found in a standard textbook of bacteriology is covered in this book. However, the authors have simplified this text, and details which they felt unnecessary for dental students has been eliminated. Their aim is to relate bacteriology to medicine and dentistry. Throughout the book references are made to specific dental subjects. Of particular interest are chapters on hypersensitiveness, chemotherapy, sterilization, dental caries, periodontal disease, and bacteriological examination of oral lesions.

The practicing dentist will find this book serves as an excellent up to date review of this important subject. For the dental student, the self imposed limitation of material in detail by the authors, may be the book's only weakness.

HOWARD C. GLAZER, D.D.S.

TEXTBOOK OF ORAL SURGERY. Edited by Gustav O. Kruger, B.S., A.M., D.D.S., F.A.C.D. 22 contributors. 573 pp., 489 illustrations. The C. V. Mosby Company, St. Louis. Price $12.75.

"This text was written with two purposes in mind: (1) to give a concise description of procedures and current thinking in each area and (2) to present the subject of oral surgery in the sequence in which it is given to the senior dental students in the lecture courses.

The volume contains 20 different subjects in 20 chapters discussed in detail by separate authors who restrict their writing to the particular subject. The discussions cover a wide range and vary from simple suture techniques to complicated maxillofacial surgery. The procedures described should be of interest to all members of the dental profession, regardless of specialty, even though many of these operations decidedly fall within the oral surgical specialty. This volume is easy to use as a surgical reference for all the details of exodontia techniques have been completely omitted. There are some minor points of disagreement amongst the 22 authors and a few chapters seem overly descriptive, but this does not detract from the composite value of this publication. The editor carefully chose his subjects, the contributors are eminently qualified and competent, the book is profusely illustrated and it should appeal to dental students, oral surgery interns, residents and the general practitioner. It is highly recomended for all military dental libraries.

LT. COL. NORBERT C. KEPHART, USAF, D.C.

ACUTE PERICARDITIS. By David H. Spodick, M.D. 182 pp., illust. Grune & Stratton, New York and London. Price $6.50.

In this presentation Dr. Spodick has very conscientiously explored the Pericardium and its diseases from all conceivable viewpoints.

In part one, the author reviews the anatomy and physiology of the pericardium, and alterations engendered by disease processes. Electrocardiographic findings in all stages of pericarditis are clearly explained and illustrated. The pathogenesis of pain, rubs, and effusions are lucidly discussed from etiotic, pathotic, and clinical standpoints with particular emphasis placed on compensated and decompensated tamponade stages, and their therapeutic management. The various indications, approaches, and techniques of paracentesis are clearly outlined.

Part two of this book is devoted to the individual features of pericarditis caused by various disease entities including inflammatory, allergic, metabolic, neoplastic, and traumatic. Finally, there is a list of 361 references selected by the author from over 700 that he used in preparation of this book.

This is a well planned book. It is easy to read and all of the illustrations have been carefully selected and well located with reference to the

text. Internists and Cardiologists will find this text a welcome addition to their libraries.

JULIAN LOVE, M.D.

SYNOPSIS OF SKIN DISEASES. By Bethel Solomons, Jun., M.A., M.D., F.R.C.P.I. 293 pp. Williams & Wilkins Co., Baltimore, exclusive U. S. agents. Price $6.75.

This compact epitome of dermatology is by far the most comprehensive to have come to the attention of this reviewer. In a quite amazing feat of condensation, and without the sacrifice of clarity, Dr. Solomons has managed to compress the contents of a dozen bulky volumes into a handbook of less than three hundred pages. Not content with being a borrower our author has added deft touches of originality to this fascinating little work. For one thing the classification is simple, logical and complete; the introductory chapters on diagnosis and treatment show evidence of clear thinking. Since American and continental authorities have been consulted there is a pleasing absence of British insularity. The index is a masterpiece of completeness which might grace a much more pretentious tome. Although this book should prove of genuine usefulness to the busy practitioner and medical student it will also have significant value for those men preparing for the American Board of Dermatology. I wish this little number had been around in 1941!

LT. COL. M. H. SAFFRON, MC, USAR

DIFFUSE LESIONS OF THE STOMACH. An Account with Special Reference to the Value of Gastric Biopsy. By Ian J. Wood, M.D., F.R.C.P., F.R.A.C.P., and Leon I. Taft, M.B., B.S., B.Sc., of Melbourne, Australia. 86 pp., with 35 figs. The Williams and Wilkins Co., Baltimore, exclusive U. S. agents. Price $6.00.

Within the limits of 86 pages, and this includes the index, the authors have presented essentially all there is to know about diffuse lesions of the stomach. Most of their book is about acute and chronic gastritis. In a concise and masterful way the various diseases of the gastric mucosa are described with frequent historical proofs. The many references throughout the text, in the chronological evolution of the knowledge of these diseases sets this book apart from the usual presentation of gastritis.

The technic of gastric biopsy with the flexible gastric biopsy tube is outlined in detail with many fine microphotographs of biopsy sections. The indications for this procedure are clearly stated.

This text appears to be the first of its kind in the teaching of the gastritides and other diffuse lesions of the stomach on a clear basis, not the least of which was the knowledge added by the use of flexible tube gastric biopsy.

All who are interested in diseases of the stomach will find this book of vital interest.

AUGUSTUS A. HALL, M.D.

MENTAL RETARDATION. Its Care, Treatment and Physiological Base. By Hans Mautner, M.D. 280 pp. Pergamon Press, New York, London, Paris. Price $5.50.

The emphasis of this book is the care, treatment and physiological basis of mental retardation. It is well written and contains many references at the end of each chapter. The book is meant to serve as an introduction into the field of mental retardation.

Dr. Mautner draws upon extensive clinical and theoretical knowledge to discuss the pathophysiology and therapeutic strategies involved in the treatment of mental retardation. The reader is impressed by the fact that retardation can be associated with or a consequence of so many disease situations. In all twenty-five chapters there is an effort to present pros and cons as developed in current research, relative to the special area under consideration. However, the author after presenting such material often will defend what he believes to be the proper research direction or he will inject penetrating observations about the research. This makes the book, though easily read, a stimulating and challenging summary of many pertinent issues in this field.

An important feature of this work is the author's ability to make simplified classification systems of diseases and drugs. The utilization of case material is introduced to illustrate clinical details. To a reader outside the field of oligophrenology, these clinical details will appear as "gems" of wisdom.

The book is heartily recommended to all those who require an up-to-date general account of the problems and progress in mental retardation. Despite the author's strenuous claims that the book is not a text, it will no doubt be used as a chief reference source by physicians.

CHESTER M. PIERCE, M.D.

INSTRUCTIONAL COURSE LECTURES. Vol. XVI-1959. American Academy of Orthopaedic Surgeons. Edited by Fred C. Reynolds, M.D. 335 pp., illust. The C. V. Mosby Company. Price $16.00.

This volume is the sixteenth in a continuous series of publications of selected lectures given at the Instructional Course Program of the American Academy of Orthopaedic Surgeons. This edition has a new publisher, but the change is so slight that only a slightly different binding, smaller type, and consecutive number of the illustrations are discernible. The editing has continued to be excellent, and in spite of a wide variety of contributors the exposition is uniformly clear, and, in fact, pleasant to read.

There are seven sections with regional groupings under such topics as Athletic Injuries, The Hand, The Foot, The Knee, The Spine, and Fractures. Osteomyelitis, Electromyography in Orthopaedic Surgery, and Unequal Extremities are discussed in one section. A symposium technique is employed in some of these sections. The reviewer felt that the best section of all was that pertaining to the treatment of fractures of the femoral neck with prostheses. In this symposium, the combined experience of some of the well known prosthetic designers and users was pooled. A brief discussion of the medico-legal implications was presented in closing paragraphs as a timely note.

These printed, selected, well-edited lectures bridge a distinct gap between the original journal article and the complete text. The lectures, as selected for any regional topic, are not inclusive, but they represent a rather recent view, since the author may have presented the lectures for several years before its appearance in this volume, revising his thoughts to a current form for this very edition. It may be another five years before his topic will be covered in a subsequent volume, however.

The photographs, x-rays, and line drawings which are reproduced here are excellent, making the good writing even more understandable. All orthopaedic surgeons and residents should read this volume, and those who treat fractures or other related trauma should have this volume available for reference.

CDR. ROBERT H. BROWN, MC. USN

ATLAS OF ROENTGENOGRAPHIC POSITIONS. Two Vols. 2nd Ed. By Vinita Merrill. 629 pp., illust. The C. V. Mosby Company, St. Louis. Price $32.50 set.

Once again the author has devoted her text almost exclusively to the anatomical and practical aspects of roentgen technique. She justifies the exclusion of data on films, screens, exposure technique and allied subjects on the basis of their continuous and rapid change in contrast to the relative stability of established body positions. That this policy has produced a book remarkably resistant to obsolescence is attested to by the small amount of revision required to bring it completely up-to-date.

Approximately forty positions with explanatory illustrations, discussion and references have been added. Very little rewriting of the original text was required. Subtle but significant changes were made in the descriptive nomenclature of the positions. The results, if adhered to, should do much to dispel the confusion associated with the naming of the various positions in the past.

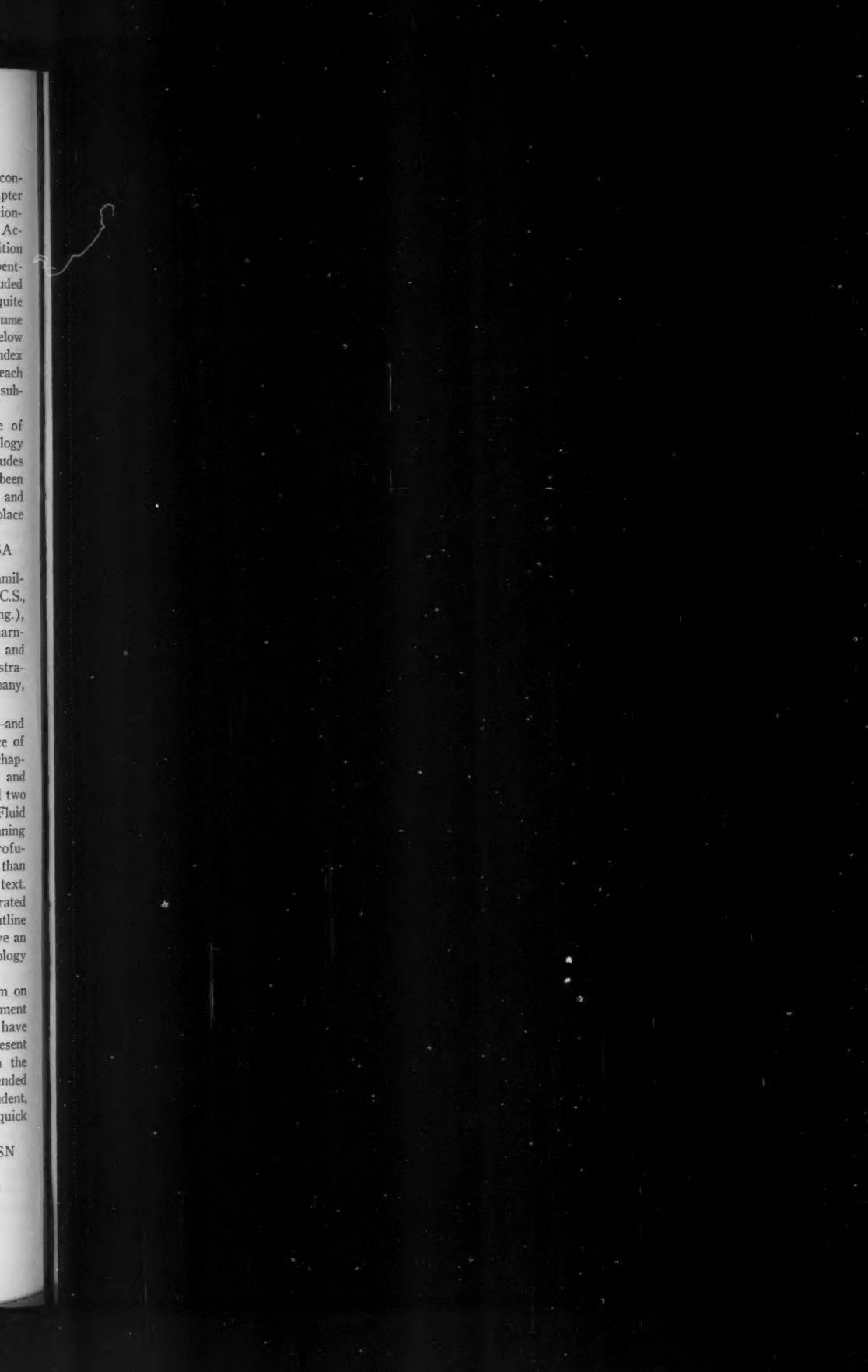
The format of the text is unchanged. Each chapter discusses a different area of the body. A general discussion of the various structures concerned, brief but adequate, introduces the chapter and is followed by a brief discussion of the positioning of the patient and the part to be studied. Accompanying illustrations show the actual position of the part, the tube position and resultant roentgenograms. A glossary of medical terms is included at the end of Volume I. The bibliography is quite extensive and is found at the end of each volume with an occasional relevant reference given below a particular position and its discussion. An index to the entire work is given at the end of each volume. The volumes are beautifully and substantially bound.

The book should be available for the use of technicians and radiologists of every radiology service, though the high cost generally precludes individual ownership. The first edition has not been outdated by the relatively minor revisions and most departments will find it unnecessary to replace their present copy of this fine text.

COL. JOHN A. ISHERWOOD, MC, USA

A SHORT PRACTICE OF SURGERY. 11th Ed. By Hamilton Bailey, F.R.C.S. (Eng.), F.A.C.S., F.I.C.S., and McNeill Love, M.S., F.R.C.S. (Eng.), F.A.C.S., F.I.C.S.; with chapters by John Charnley, F.R.C.S., William P. Cleland, F.R.C.S., and Geoffrey Knight, F.R.C.S. 1389 pp. 1697 illustrations (285 colored): J. B. Lippincott Company, Philadelphia. Price $18.00.

The title of this volume is an understatement—and it reflects the giant strides made in the science of Surgery since the first edition in 1932. The chapters on thyroid, ductless glands, the liver and stomach have been rewritten among others, and two new chapters have been included, one on Fluid Balance and on Radiotherapy. Thoughtful planning of this work is evident as manifested by the profusion of illustrations almost all of which are less than two inches square allowing more space for the text. The text is presented in a succinct concentrated manner, with frequent classifications and outline forms. The chapters on anatomical systems have an embryological and surgical anatomy and physiology introduction, with diagrammatic illustrations.

In a sense this is an illustrated compendium on general surgery. Surgical Technique and treatment are indicated but not detailed. The authors have succeeded magnificently in their purpose to present a "Short" Practice of Surgery in step with the march of Surgical progress. It is recommended for the midnight oil study of the medical student, the intern or resident in surgery, or as a quick reference for the general practitioner.

CAPT. R. M. MUGRAGE, MC, USN